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MEDICINE: PAST AND PRESENT*

Alfred Stengle, M. D.
Philadelphia, Pa.

Dr. Alfred Stengle: Mr. President, ladies and gentlemen, this formidable title may suggest to you that I intend to attack you with a historical review, going back to the Middle Ages or ancient time; but that is not the purpose. It intrigued me to consider and think how it might interest you to compare the medicine of today and the medicine that I personally remember in my earliest days as a medical student, which is just about fifty years ago.

I am not going quite so far back as Dr. Dean Lewis who spoke of the time when Joseph Lister was a young surgeon walking in the wards of the hospital in Edinburgh. That was about 1865. A little while before he introduced his celebrated "antiseptic surgery" that has created modern surgery and so many other things, as Dr. Lewis has pointed out to you. But going back to the days when I was a student, I recall, for example, a surgeon, one of my teachers, who operated in the old amphitheater every operating day through the three years in the same old blue woolen coat, and when he finished his day's operations he hung his coat on a peg outside of the operating room. He prided himself on never having anything—and he always had it—but what he was pleased to call "laudable pus"—the kind of thing Dr. Lewis was referring to in the experiences of Joseph Lister in Edinburgh.

I remember that we had a very distinguished obstetrician, a teacher who in drawing inspiration from the past for his lectures went back to Avicenna and the early Arabians. He had been a contemporary in his earlier days (a younger contemporary) of the celebrated professors who so vigorously attacked Oliver Wendell Holmes when that sage person taught the people, on this side of the world at least, that puerperal fever was due to doctors' dirty hands and dirty gloves, for which he was much reviled, as his predecessor who first made this discovery in Vienna was almost stoned to death.

Then I can recall a teacher who was called a therapeutist, one who deals with the administration of drugs, whose ideas of prescribing drugs were not far removed from some earlier American medical teachers (I recall several of them in Kentucky at the Transylvania Medical School) who gave as much as half a pound of calomel per day to a poor sick patient, and, remarkable to say, once in a while one of them recovered.

Then I used to hear it said, and it was common talk among young medical men in my student days, that one of our surgeons was just as good a doctor as the best of them, just as good a medical man as the best of them, and perhaps it was so, because at that date none of the wonderful advances that have made medicine a very intricate subject had yet been dreamed of, much less developed. And as for surgery, there was no surgeon in that day who really practiced surgery as a specialty. They all practiced medicine as they had seventy-five or eighty years before.

Now, I don't want to give anyone the idea that all medical men at the day I am speaking of were given to the crudities that I have alleged in these instances. There was a younger group of men coming along who were mighty keen, who were seeing the light, and who realized the deficiencies in medicine at that time, but who realized also that they lacked some method of attack which would enable them to take hold of the problems of medicine and push the subject forward.

If you study anything, I don't care whether it is politics or sciences or any other human enterprise, you will find that the advances are made in waves, each period being dominated by the discovery of some way of doing things. Now it is electricity; now, it is a chemical method; now it is an optical method; now it is something else. And so the medicine of those days, my early student days, was waiting for what? For some new way, some new method, and fortunately we had not so very long to wait.

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*Address delivered before the General Public Meeting of the Medical Society of Delaware, Wilmington, September 26, 1933.

The younger men of the day had become interested in the subject of pathology, that great subject which deals with the changes that occur in the body, in disease, and they flirted a bit with the microscope, a novel instrument to many medical men even then, although it had been in common use for some thirty or forty years. This science of pathology that I refer to was probably about thirty years old, at least in its full development, at that time, its real establishment dating from perhaps about 1850. The microscope had been known for one hundred years before that and perhaps a great deal longer than that, but with the exception of that there were no instruments of precision, no instruments that you could call by that name in my day that were in common use.

I recall well as a first year's student seeing the first blood-counting apparatus, a thing which every hospital in the land has and almost every doctor has in his office. The first blood-counting apparatus in Philadelphia, was demonstrated to us students by one of the young instructors—a very wonderful thing he had just gotten. Later on when I was an interne in the hospital it used to be my task to call him to come out to the hospital and make a blood count on some peculiarly interesting patient, a thing that is done now first of all with every patient as he enters the hospital. That was the only blood-counting apparatus that was in Philadelphia for some years.

Then there was another little instrument that came along, by which tracings could be made from the pulse at the wrist on smoked paper—the sphygmograph. And then still another instrument that had come into use about twenty years before but lots of doctors hadn't yet learned how to use this wonderful instrument—that is the clinical thermometer that most of you have at home to put under your tongue and take your temperature. Twenty years or so before the time I speak of that was first put into use. These were all of the instruments a doctor had to work with to find out anything more than what he could find with his ears and eyes and fingers and sense of smell.

What kind of equipment do you suppose a doctor would need, intellectual and physical, to practice medicine at that stage? It was the kind of equipment which I myself saw. As far as the doctor's office was concerned, all he needed was a desk and some chairs. Some of the more up-to-date of them had an examining table on which a patient could be made to lie down and be examined a little more in detail perhaps. The window sill was a sufficiently good place to serve as a laboratory. For many years it was the only laboratory doctors had with a few test tubes and an alcohol lamp, and the very advanced fellows perhaps had a cheap sort of microscope. That was the equipment a doctor had in his office. When he went out he was equipped with a stethoscope, if he was a really up-to-date man and had learned how to examine people physically but if he wasn't altogether an up-to-date man it was enough to feel the pulse and listen to the story and look at the tongue, and a medical diagnosis was made on that basis.

Now, this may sound like a very much overdrawn story of what medicine was within one's lifetime, and yet it is not so very overdrawn at that, and I have picked out things which I have actually seen, and saw many times for that matter, to emphasize the fact that medicine was a very simple thing in those days.

We hear a good deal at present about the high cost of medical care, as Dr. Lewis has just said, and we hear also a good deal about this dreadful specialization which is going on in medicine, and it is partly to come back to those two topics that I have chosen to speak on the subject I am speaking on now. I say fortunately about the time I am referring to we were just on the brink of great discoveries. There were two wonderful Frenchmen, Claude Bernard and Louis Pasteur—Claude Bernard the innovator, the inventor of experimental investigative medicine, the father of them all and the greatest of them all; and Louis Pasteur, originally a chemist, whose discoveries led him more and more into the realm of medical study. Bernard's work, beginning around 1860 somewhat antedated Pasteur's work, but it was soon eclipsed by the Dramatic quality of Pasteur's discoveries and there is a long period of years during which Bernard was practically unrecognized by the medical profession itself because this wonderful new science introduced by Pasteur, bacteriology, ran like wildfire through the world; and having lived through that period it comes back to me with great force.

It was only a little over a decade before my student days, about 1873, that Pasteur proved to the world—and not without considerable opposition on the part of his contemporaries—what fermentation was due to: that it was due to germs (living things) and not to spontaneous generation as was thought before. From that he readily enough went to the second stage and showed that living germs produced disease, and he first of all investigated and proved that a scourge among sheep in France, anthrax, was due to a living germ. Not only that, but he soon afterwards produced a cure, and then a protection for the sheep against it, and for man as well. After Pasteur and second only to him a German, Robert Koch developed ways of isolating bacteria in "pure culture" and discovered the bacillus of tuberculosis.

After Pasteur's first work and during my early student and professional days, one could hardly pick up a medical journal from one week to the next week without seeing a new disease whose cause had just been discovered. Now it was Friedlaender discovering the cause of pneumonia, and then Fraenkel with another one, and then they discovered the cause of typhoid fever, and before long the germ of erysipelas, and the germ of this and that — a Japanese discovering the cause of lockjaw, etc. So it went on week after week for several years, and then these wonderful explorers of science, not content with having found the germs began to work to see if there might not be some way in which these germs could be made to work to produce antagonistic bodies—that is to say, produce immunity or a cure of the disease which they themselves produced. Out of that grew another science called serology, and we hear of serums for this and that, and vaccines which are a modification, and typhoid fever is almost wiped off the map by protective innoculation. With the antitoxin diptheria has practically been annihilated as a great world scourge; and even tuberculin the first of all of these, which the great German Koch introduced and which in some measure was a failure, was not altogether a failure. Thus we have gone on from one thing to another until infectious diseases are understood.

What did those old teachers of my earlier days and before that know of the causes of disease? What did they tell us about the causes of disease? They spoke of miasms, of the checking of perspiration, of poor ventilation, of putrid odors, and sometimes of the inheritance of humors and diathesis—a lot of metaphysical jargon, and then along came these scientists and put the cause of many diseases squarely on the map.

One young man—you have heard it before and I will not dwell on this at length—had the vision to see an opportunity to use Pasteur's discovery to a most wonderful purpose, and that was Lister. Having read about Pasteur's investigations of fermentation he thought: "Here is the solution of our troubles in our surgical wards and those frightful gangrenous conditions of the wounds of patients operated on," and he introduced Listerism, antiseptic surgery. No longer could a surgeon in an old blue woolen coat go into an operating amphitheater before a medical or a student public, but he must be in spotless white linen, clean linen and still cleaner hands, and finally rubber gloves. Then as this antiseptic surgery made many things possible, the intricacies of surgery grew with marvelous rapidity.

Who dared in those days to go into the abdomen and operate on patients? Who dared in those days to attempt a penetration of the chest in an operative way, much less to think of operating on the very interior of our skulls as the surgeons of the day are doing? The surgeon no longer would be a man who would be "as good a medical man as the best of them." A surgeon of today has to be a surgeon and nothing else if he is carrying on surgery to its highest development.

After Lister's method, making advances possible, other specialties arose. It became possible, for example, by using optical instruments to investigate the interior of the body. There is an instrument by which the operator can look into the interior of the stomach, or the interior of the bronchial tubes, or the interior of any other part of the body that the surgeon chooses to enter, with impunity, revealing the conditions within. That, of course, is a highly developed specialty. No one can learn that out of books. That has to be learned by years perhaps of practice.

After these things had come to pass the world began to remember, the medical world began to remember, that man Claude Bernard who started to investigate the physiology of the body, and who, as I said, was dwarfed or somewhat put in the background by bacteriology's sudden growth through Pasteur. People began to develop methods to study the physiology of the body, and today the medical man with the methods that he now has is able to make some kind of determination of practically every organ of the body. The heart is studied in the most minute way by an electrical method. The movements within the stomach and within the intestinal tract can be studied by balloon-like mechanisms which they introduce to make tracings on smoked paper on the outside. The functional action of the kidneys and liver and other organs are susceptible of investigation. And medicine has thus become an enormously complicated business.

Now, what has been the effect of this on the practice of medicine? It has undoubtedly had a very profound effect. When people say to you: "Oh, if we only had the kind of doctors we used to have when Mother was young—the good, old family doctor who did everything for us from the cradle to the grave, how nice that would be"—well, how nice would that be? Practically all the things that are possible to do for the alleviation of pain today were outside of the ken of the man of that day, and no one, no matter how skilled or talented, can possibly be encyclopedic enough to master all of the medical branches and divisions. Specialization, therefore, is an absolute necessity. It has come to stay. It should not be treated with contempt and scorn, because, after all, who demands specialization, and most urgently? Perhaps the layman sometimes thinks it is the doctor. I tell you it isn't the doctor; it is the patient, the public. The person who tells you that he wishes to have the old family doctor who did everything for him from the cradle to the grave, if he gets a pain in his eye, rushes off to an eye doctor at once, and doesn't go to the family doctor and ask him about it. Specialization has all kinds of advantages. It is an absolute essential, but it has also possibilities of being frightfully abused, and it is frightfully abused.

What is the way out? The way out is the family doctor, and when people say the family doctor doesn't exist, let me tell you that they don't know what they are talking about. I know plenty of family doctors. To be sure, these family doctors that I am thinking of now wouldn't undertake to do a major surgical operation which the old family doctor never heard of, of course, because they haven't got the apparatus or the skill to do it. They wouldn't undertake an intricate examination of some sort. They wouldn't put a bronchoscope down into a person's bronchial tubes. Of course, they wouldn't. But these family doctors—and I know scores of them—are thoroughly educated men, well trained; they know all there is to know about medicine although they may not be able to do all of the things, and the layman who selects one of this kind and gives him his confidence and uses him as his advisor, will be steered away from a great many extravagances in an unnecessary resort to specialization.

It is the people who rush to the specialist on their own account firsthand, or force it upon the family doctor because the doctor doesn't want to be thought to be jealous or to be obstructive and he yields and says: "All right, if you want to go to a specialist, go." I can't tell you how many scores or hundreds of times doctors have said to me: "Well, this patient wanted to go to so and so, and of course I let him go." They spend a lot of money doing that thing, and it is no use.

The family doctor nowadays is a thoroughly educated man. Medical education is not what it was when I was a medical student. In the first place, they are thoroughly educated before they are admitted to medical classes. In the second place, the medical studies themselves are thoroughgoing. In the third place, this state and most states require that the young man shall spend a year or two in a hospital as a pupil after he has graduated from the medical school. When you get a man who has gone through all that, he is a thoroughly grounded individual, and if he doesn't choose to go into a specialty but chooses to be a family physician, he is the kind of man I would want myself to tie to as my advisor, and if he told me that I needn't worry about that scratchiness in my throat, I would take his word for it; I wouldn't run around the corner and have another doctor look at my throat. If he told me I didn't need this or that, I would take his word for it. Sometimes he may be mistaken; we all may be mistaken, but I think whenever I want advice I would prefer to go to the person who had made an honest-to-goodness attempt to know all there was about me. And if the man who spends three years in college and four years in a medical school, and two years in a hospital under the best teachers he can find, doesn't know something about what he is trying to do, I don't know where you can find the person who does. My plea, therefore, is for the family doctor, and he is a large part of the way out in this matter of specialization.

Another part is that there shall be a careful study of the patient first, and here I think we doctors are somewhat at fault. We are apt to get a bit lazy, some of us, and we pass on to someone in the laboratory or someone in the x-ray shop, the business of making a diagnosis that we probably could have made with our unaided senses and saved the patient both the trouble and expense, but that is a difficult thing to speak of; it is a difficult thing to rectify. After all, things are turned up by these examinations sometimes that we didn't suspect. But the main thing is that we should give a greater position and greater glory to the family doctor.

PINK PILLS AND PANACEAS*

Arthur J. Cramp, M. D., †

Chicago, Illinois

Mr. Chairman, ladies and gentlemen: I have two titles for this talk, which, by the way, I have shortened considerably in consideration of the late hour—the one that has been given, and another title: "Patent Medicine and the Public Health."

It is recorded that a man went into one of the cheaper restaurants in London and found on the menu something that he didn't understand. He called the waitress over and said: "What is this that I see on the menu here, 'bungalow fluff'?" She said: "Oh, sir, we had that on the menu yesterday as 'cottage pudding,' but it didn't go so well." Now my talk is just "cottage pudding," whether it is given under the fancy name of "bungalow fluff" or under the common name.

I have to preface this talk always with the statement that while I am talking about "patent medicines," there are, for all practical purposes, no such things on the market as patent medicines. That isn't strictly true—there are some medicines that are actually patented, but what we colloquially call "patent medicines" are not patented. They are not patented because they couldn't be. Uncle Sam will not grant a patent, or at least he is not supposed to grant a patent except for a new and useful invention. Those are the essential elements of every patent. What we call "patent medicines," being neither new nor useful, couldn't be patented.

I believe that even if they were patentable, the manufacturers would not patent them, first, because a patent is only good for seventeen years, at the end of which time, of course, anybody can make the product that has been patented, and second, because in order to get a patent, it is necessary for the person applying for that patent to lay his cards on the table face up and tell what he has to offer for the Patent Office to examine. In other words, there is nothing secret about a real patented medicine. But, take away secrecy from what we colloquially call "patent medicines" and the "patent medicine" business will fall to pieces, for secrecy and the mystery that goes with secrecy are the chief assets of the "patent medicine" maker.

I have some slides that I want to show this evening, but before we start with the slides I should like to cover a few general principles that are involved in this talk. You may suppose that the Pure Food Law—the National Food and Drugs Act—is sufficient to protect the public against fraud in "patent medicines"; and I am going to use the term "patent medicines" tonight in the sense that you yourselves use it, the colloquial sense, meaning not a medicine that is patented, but a package medicine, usually secret in composition, put up for the self-treatment of self-diagnosed ailments, and frequently sold under false or fraudulent claims.

The Pure Food Law which went into effect January 1, 1907, does protect the public to some extent against fraud in medicine. It requires, in the first place, that the "patent medicine" maker shall not lie on the trade package. Now, mind you, I didn't say that it required him to tell the truth on the package; there's a difference. But he shall not lie on the trade package. He mustn't make any false or misleading claims for composition or for the origin of his product. He mustn't make any false and fraudulent claims for the therapeutic value of his product on the trade package. He may lie to his heart's content in newspaper advertisements and over the radio and on the billboards and on circulars that are distributed, and the National Pure Food Law can't touch him. And that is what he often does. He is little concerned with what he may say on the trade package, which you don't get until your money has gone over the counter. He is greatly concerned, however, with telling you through those avenues of publicity that are without any penalty attached to them, how wonderful his preparation is. I shall show you through the slides some of the changes that have taken place in the actual labeling of "patent medicines" since the law went into effect.

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*Address delivered before the General Public Meeting of the Medical Society of Delaware, Wilmington, September 26, 1933.

†Director of the Bureau of Investigation of the American Medical Association.

Another thing that the law does is to require the "patent medicine" maker to declare the presence and the amount of eleven drugs that are named in the Act—only eleven out of the hundreds of thousands of drugs that can be used. Some of the most dangerous poisons that we know anything about are not in those eleven drugs. The nostrum maker can put strychnine, or carbolic acid, or aconite, or bichloride of mercury, or a number of other equally deadly poisons, in his stuff, and he doesn't have to declare either the presence or the amount of any of them, but if he does have any one of the eleven drugs or derivatives of those drugs named in the Act, he must declare them on the trade package.

Those are two things on which the present law needs to have its powers extended. It is quite obvious that if the idea of declaring the presence of drugs on the label is to protect the public, then in order to protect the public the manufacturer should be required to declare the presence of every drug in his preparation for which he claims any therapeutic effect. In other words, the layman who doctors himself has the same moral right as the physician who is going to doctor the layman. No physician worthy of the name will give a patient a drug that he knows nothing about, and if the layman is going to be his own doctor, he has the right to know what he is going to pour down his throat. That would seem to be obvious. Therefore, the law should be extended to cover all drugs for which therapeutic action is claimed. The law should also be extended to cover all avenues of publicity. If, to protect the public, the manufacturer is prohibited from lieing on the trade package, certainly it would be more rational to prohibit him from lieing about his product in any place —newspapers, radio, billboards, or anywhere else. And yet, under the present national law, as I have said, there is no control over collateral advertising.

There should further be an extension of the law, although that I can't discuss this evening, to cover cosmetics. Under the present law a drug is defined as a substance used in the treatment or alleviation of disease, and that lets out some of the most dangerous drugs that are used and found in certain cosmetics, because obviously a cosmetic isn't used in the treatment of disease.

I want to show you this evening by slides also some of the angles of the testimonial racket, for that is what it is. Testimonials are one of the mainstays of the "patent medicine" maker. If your neighbor tells you that he has driven a Ford car or a Buick car for so many years and finds it has given excellent service, if he tells you he has a Baldwin piano or a Steinway or Knabe or some other piano that has stood up under severe punishment on the part of the children of the family, if he tells you he has purchased his overcoats from such and such a store for a good many years and found that they give good wear—you are justified in giving due weight to what he tells you, because he knows what he is talking about. But if he tells you that he got up sick one morning and took two bottles of "Peruna" which cured him, you don't have to believe him, because he is not competent to express such an opinion. There are so many factors involved in the treatment of human ailments that it may take a lifetime of study to say with any degree of certainty that a certain drug will cure this disease or benefit that disease.

As every physician knows, about 85 per cent of all of our ailments tend toward recovery. That is where the man who is selling a medicine has the advantage over a man selling a motor car or suit of clothes or piano. If you buy a piano or motor car that doesn't give good service, you have sense enough not to go back and buy a similar car or piano. The manufacturers of all merchandise, except that sold for the treatment of human ailments, have nature working against them in wear and tear, and they have to "deliver the goods" if they expect to stay in business.

The man selling a medicament has an eighty-five to one hundred shot in his favor to start with, and that is how the testimonial industry is developed. John Doe gets up some morning feeling seedy, and on his way downtown he reads in a "patent medicine" advertisement in his morning paper about a set of symptoms that he thinks he has, and a number he didn't know he had until he read the advertisement, and he is convinced the thing to do is to stop into the nearest drug store and get a bottle of the nostrum advertised. He does so, and in a day or two he is well. Now in all human probability he would have been well anyway, but till the end of time he will maintain that it was the "patent medicine" that cured him, and you never can convince him to the contrary.

It has been part of my work in the last twenty-seven years in investigating medical frauds, to investigate testimonials. In the case of testimonials for cancer cures, it is a rather simple job. All I have to do is wait and I can get the death certificate of the person who gave the testimonial, if he had cancer. With consumption cures the same thing is true. There are in the files of the Bureau of Investigation scores of "patent medicine" testimonials for cancer and for consumption, and with each one is the death certificate of the person who gave the testimonial! Every one of those persons was just as honest and just as sincere as anyone in this hall. They believed that they would be cured, and they wrote the testimonials, and the testimonials are used long after they have been buried. In the case of testimonials for rupture cures and epilepsy cures, you can wait two or three years and write to persons and usually get a reply admitting that they were mistaken. They thought they were cured of rupture but weren't, and they are still ruptured; they are still deaf and a little deafer than they were when they gave the testimonial, and not infrequently say they are now using something that they think will cure them. And in epilepsy cases it is the same thing. But in the larger group cases where you are not dealing with specific conditions, you run up against a brick wall for the reasons already given.

The American people spend about $360.000.-000 annually on "patent medicines" — about twice as much money as they spend on physicians' prescriptions and on simple home remedies —official products, such as epsom salt, castor oil, cod liver oil, etc.

(Dr. Cramp then showed a number of slides illustrating specifically the general principles just given.)

CYSTITIS: ITS CAUSE AND TREATMENT*

Newell R. Washburn, M. D.,
Milford, Del.

Until the past decade the term "cystitis" was a specific entity in the minds of most physicians, characterized by frequency and dysuria, and presumed to designate inflammation of the bladder. In fact most of us today look upon the term as meaning any condition that would favor irritability of the bladder. Therefore, without looking further, treat the patient with urinary antiseptics and bladder irrigations, in spite of the fact that numerous authorities on the subject have investigated large series of cases with the almost unanimous conclusion that cystitis is merely a manifestation of pathology in the genital tract. One author, Lower, states "cystitis is a diagnostic scapegoat." He compares the mucous membrane of the bladder to that of the mouth in which we must have serious and repeated insults due to chronic irritation or lowered resistance before infection gains a foothold. Another author, McBee, says "the genital tract relies on the bladder to make known any existing pathology; it spreads the alarm". Therefore, if we simply treat the bladder symptoms without looking further, we find the condition often becomes worse, due to the fact that the disease is elswhere in the urinary tract. In other words, as Pelouze states, "The bladder is an especially well-behaved organ, singularly indisposed to start any trouble". He analyzes a series of 20 cases and finds the pathology in all of them to be elsewhere in the genito-urinary tract.

Another much used term is "catheter cystitis". Cabot, has shown experimentally that the normal bladder cannot be infected by instilling organisms, and believes that catheter cystitis is due to a weak, boggy bladder wall or to over-distention. He advises catheterizing post-operative patients before the bladder becomes distended. Chills and fever after catheterization is usually due to a pyelo-nephritis. Urgency is due to a trigonitis or inflammation of the waterfall area, and urine trickling over this sensitive area causes the urgency.

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*Read before the Medical Society of Delaware, Wilmington, September 26, 1933.

When confronted with a case of cystitis the first step is to locate the cause, which in most cases will be found somewhere in the genito-urinary system. Rarely the cause is in some remote part of the body; such as bacterial endocarditis, an infected tooth, general debility etc. Still more rarely the trouble will be found in the bladder itself. It will also be found that the pathology in the female is more often above the bladder; that is, in the ureters and kidneys. In the male the trouble is more often below the bladder; that is, in the prostate, urethra and associated organs. A careful examination may reveal in either sex a ureteritis, stricture, contracture of the vesical neck, diverticulitis, congenital malformation polyposis, etc. In the male we may also find seminal vesiculitis, prostatitis, prostatic hypertrophy or malignancy. Likewise in the female we may find a cystocele, old lacerations or disease of the reproductive organs with secondary involvement of the bladder.

We should also keep in mind the fact that gonorrheal infections do not go beyond the trigone, as at this point the epithelium changes, and gonorrhea grows only on ciliated epithelium.

If no definite pathology is found below the bladder, the ureters and kidneys require investigation. Here we may have malformations of the ureteral orifices, stricture, inflammation, or kinks of the ureters, calculi, neoplasms, tuberculosis, pyelitis, pyelonephritis, hydronephrosis, cysts etc.

The resulting cystitis, regardless of its cause, may be classified as acute or chronic, depending on its duration. Also it may be infectious or non-infectious, the latter often being due to trauma, irritating drugs, nervous disorders etc.

An interesting series of bladder tumors in dye workers has recently been reported by Drs. Lang W. Anderson and Victor Washburn. Although it has been known in Europe for some time that there was a tendency toward bladder tumors in dye workers, this is the first time the condition has been discovered in this country. Among the more unusual types of bladder pathology which are very often unrecognized and which involve the deeper layers of the bladder wall are those designated by various authors as submucous cystitis, Hunner's ulcer, elusive ulcer etc. The etiology of this type is not clear, but is probably due either to a long-standing chronic cystitis, to emboli, to a focus of infection in some other part of the body, or to general debility. It is characterized by severe pain and frequency, and as the condition progresses the bladder becomes contracted and scarred and the capacity very small. Culture of the urine usually reveals streptococci or staphlococci or both. Careful cystoscopic examination shows areas of scar tissue and areas of deep ulceration in the bladder wall which tends to bleed if the bladder is distended.

Another condition which may be missed is suppurative pericystitis. This is characterized by infection and often by suppuration of the perivesical region. The cause is usually due to a focus of infection elsewhere in the body. Crabtree reports two cases cured by drainage.

Amoebic cystitis is very rare. Rogers reports a case of apparently true amoebic cystitis.

The term "encrusted cystitis" is used to describe those cases in which there is found to be areas of alkaline encrustations on the bladder mucosa, and the patient at intervals passes calcareous material in the urine. The etiology is probably the result of a stubborn alkaline cystitis. Hoger and McGrath have shown by experiments that a secondary invasion of an alkaline bladder with salmonella ammoniae causes the liberation of an enzyme, urease, which in turn converts urea to ammonia, thus causing an alkaline reaction and the precipitation of the salts of calcium, magnesium and ammonium resulting in the encrustations.

Another unusual bladder complication is "cystitis cystica," characterized by multiple small cysts on the bladder mucosa which are probably the result of inflammation. Microscopically they are found to be epithelial buds and nests with subsequent degeneration of the central cells. A similar condition may be found in the pelvis of the kidney or in the ureter, known respectively as pyelitis cystica and ureteritis cystica.

The condition called "cystitis emphysematosa," in which the bladder wall is studded with small cysts containing gas is believed by Hueber to be due to the action of enzymes on glucose-producing gas, or to the action of B. coli on the bladder wall. The condition is more often found at necropsy, and in these cases is probably a post mortem change.

Ravich and Katzen report a case of marked cystitis emphysematosa found at operation on a case of diverticulitis. These latter conditions however are unusual and ordinarily not encountered except in rare cases. In the last 15 cases of so-called cystitis which we have encountered on examination, the etiology was found to be as follows: hypertrophy of prostate, 3; cystocele, 2; tuberculosis of the kidney, 1; large pus kidney secondary to nephrolithiasis, 1; interstitial cystitis, 2; laceration due to childbirth, 2; pelvic inflammation with bladder irritation, 2; gravel, 2.

Pelouze reports 20 cases of cystitis and in all of them the pathology was found to be elsewhere in the genito-urinary tract.

When we consider the great number of conditions which may give rise to cystitis, we realize how important it is to determine the underlying pathology before we can proceed with any intelligent form of treatment. Once a definite diagnosis is made the treatment is usually obvious. However, if there is a severe acute cystitis as a result of some underlying pathology such as pyelitis, renal tuberculosis, cancer, cystocele. hypertrophied prostate, stone, etc., it is usually wise to put the patient to bed for ten days until the symptoms of pain and urgency have subsided and the urine clears. Hot fomentations should be applied over bladder and perineum, and opium suppositories and sedatives used as indicated. Potassium citrate, tincture hyoscyamus, sodium bicarbonate are most commonly the drugs given by mouth. Urotropin may be given to tolerance. The more recent products, such as capricol, pyridium etc., have not been found superior to the old standbys. Fluids should be forced. Gentle bladder irrigations of potassium permanganate or boric acid solution, silver nitrate 1:-8000, acriflavine 1:4000, often give very satisfactory results. Also, if the urine is stale alkaline, use ½% acetic acid. Irrigations may be followed by instillations of argyrol 10-20%, neosilvol 10-20%, mercurchrome ½%, if well tolerated. If the patient does not respond well it is advisable to stop local treatment for a period. A soft rubber catheter should be used for irrigations.

As soon as the severe symptoms subside a thorough search should be instituted for the underlying cause. This includes a general examination, and an investigation of the urinary tract. This search is then similar to the procedure followed in cases of the so-called chronic stage.

In the chronic stage we find that the pain and frequency may be absent, probably due to the patients having more or less adapted themselves to the existing condition.

The first step in the treatment of the chronic, or the acute after the serious bladder irritation has subsided, is the thorough examination to determine the etiology. Once it is determined whether it be a pyelitis, a stone, a large prostate, tuberculosis, carcinoma, etc, we treat these existing conditions by appropriate methods. At the same time it is well to continue the irrigations and instillations until the existing bladder pathology has subsided. If there is a pyelitis, it should be treated by bed rest, forced fluids, urinary antiseptics, and in most cases it is wise to catheterize the ureter on the side involved to rule out stricture or stone, and if indicated, a pyelogram should be taken. The same applies to tuberculous cystitis, which we find is almost always secondary to a tuberculous kidney. Here we usually have negative cultures, but the tubercle organisms may be found by staining a centrifuged specimen or by guinea pig injection. If only one kidney is involved and the patient is in good condition, remove the offending organ. If both are involved, the case must receive the usual treatment for tuberculosis. In the treatment of tuberculous kidneys and bladder it has been found that great improvement often occurs when chaulmoogra oil is given by mouth, in capsules of 5 to 10 minim doses.

Large stones in the pelvis of the kidney, in the ureter, or in the bladder, require surgical removal. If there is extensive kidney damage to one side only, the kidney should be removed. Strictures of the ureter usually respond to dilitation. Malformations of the urinary tract may often be remedied by surgery. Malignancy may involve any part of the urinary system, and is treated by surgery, x-ray and radium.

Ureteral kinks or ptosis of the kidney may require surgery. In lesions below the bladder, probably the most common is stricture, usually the result of an old Neisserian infection. These are treated by passing sounds, or, in severe cases, by internal or external urethrotomy.

Contraction of the vesical neck usually responds to dilatation. Another very common cause of bladder pathology is prostatic hypertrophy, especially when the middle lobe is involved. Here we find a depression in the waterfall area of the bladder and in this cup urine continually standing usually becomes infected, giving a continual irritation and consequently the symptoms of frequency. If the condition persists, we get urinary retention. Needless to say, these cases require immediate attention. Fortunately a large number of them may be relieved, at least temporarily, by the passage of sounds and by irrigations and instillations until the infection has cleared. However, at times the obstruction becomes complete or nearly so, and the bladder becomes distended with a dribbling overflow. At times there may also be infection of the urine in the bladder. In such cases it is usually fatal to suddenly decompress the bladder, due to the upset in the hydrostatic equilibrium in the kidneys, causing such marked congestion that kidney insufficiency and death follows, the kidneys being unable to withstand and readjust to the suddenly lowered pressure. In these cases the urine should either be withdrawn in small amounts every hour or so, or by inserting a hypodermic needle in the clamped catheter and allowing it to drip until the pressure is gradually lowered.

The treatment of gonorrheal complications is not within the scope of this paper, but, needless to say, strictures, acute and chronic urethritis, vesiculitis, etc., may cause chronic bladder symptoms which disappear when these are relieved. Likewise, large stones in the urinary tract should be removed by surgery, and if one kidney is badly damaged, the other being in good condition, the infected organ should be removed. Pelvic pathology in the female, with secondary bladder irritation, usually requires surgical treatment. Geisinger quotes several cases in which pelvic operations were performed when it was later found that the patients had tuberculous or pus kidneys.

The more unusual bladder conditions such as interstitial cystitis, elusive or Hunner's ulcer, encrusted cystitis, ulcerative, gangrenous, encrusted alkaline cystitis, granuloma, or syphilitic, cystitis, animal or vegetable parasites, cystitis emphysematosa, pericystitis, cystitis cystica etc., are not commonly encountered and are unrecognized except by persons familiar with these conditions. The treatment of interstitial cystitis, elusive or Hunner's ulcer, all of which may be the same condition, consist of the general hygenic improvements for the patient whenever possible—rest, fresh air, high calorie diet, the elimination of foci of infection, together with a careful examination of the urinary tract, with the correction of any existing pathology. In general, however, we find little to help us in these cases and are forced to treat the condition as an entity.

Sohmer describes interstitial cystitis under the following types: simple ulcer, ulcerative, gangrenous, alkaline encrusted granuloma etc. Other authorities, such as Hunner, believe that the elusive ulcer or Hunner's ulcer is a specific entity. The treatment, however, is practically the same in all these types. If the condition does not respond to bladder distention, the ulcers should be fulgurated or even resected if necessary, by open or closed operation.

Syphilitic and granulomatous conditions should receive their specific treatments along with the general measures of irrigations and urinary antiseptics. Suppurative pericystitis should be treated by incision and drainage. The treatment of alkaline encrusted cystitis consists first of making the urine acid. Hager advises using lactic acid or whey, or silver nitrate injections into the bladder, followed if necessary by curettment or cauterization of the bladder. In severe cases it may be necessary to open the bladder and remove the encrustations. Denslow reports 5 cases of encrusted cystitis treated by instillations and irrigations, with practically no improvement. One submitted to open operation and was greatly improved.

The more rare conditions such as cystitis cystica and cystitis emphysemotosa are probably never encountered or recognized except by experts, so that little need be said concerning their treatment, since so very little is known concerning their etiology.

Conclusions

1. Cystitis per se is very rare.
2. The bladder is the watchdog of the urinary tract and makes known any existing pathology.
3. The complaint of frequency and dysuria calls for a general examination of the patient, for an examination of the structures contiguous to the bladder, and for a careful examination of the urinary system.
4. The bladder pathology usually disappears with the removal of some offending condition which may be near to or remote from the bladder.

Discussion

Dr. B. S. Vallett: (Wilmington) Dr. Washburn has covered this subject very well, and there is very little left to say. I think the important thing, of course, in all cases of cystitis is to isolate the offending organism. Young and Colston in a review of about 600 cases at Johns Hopkins found that the colon bacillus was responsible in about 60% of the cases. In approximately two hundred fifty cases this organism was isolated in pure culture. The next offending organisms were the streptococci and the micrococci, which totalled about 200 cases. Then there was a sudden drop, and bacillus proteus and the typhoid groups were responsible for the rest of the cases. Whenever we get a case of cystitis the important thing then is to isolate the organism so that the treatment may be scientific.

There was one point I didn't know whether he mentioned or not, and that was chemotherapy. We find that in the coccal forms neoarsphenamine is a very good drug, and the coccal forms very often affect the kidney where the bladder isn't affected at the time. In other words, the incidence of coccal forms indicated is higher than those in the bladder. The reverse is true of colon bacilli. We find more cystitis due to colon than we do formed in the kidney. So that neoarsphenamine is a very useful drug in coccal forms. In the bacillar forms mercurochrome injections have proven very useful. Now, just how mercurochrome does this we don't know, because it won't kill the bacteria in vitro where it does often kill them in vivo.

Another point in the treatment is the ketogenic diet. At the Mayo Clinic, Clark has found that by changing the urine—raising the hydrogen concentration to around five—many cases of cystitis and pyelo-nephritis are benefited, and the urine can be sterilized in a great many cases.

I just wanted to mention those things in the treatment: the ketogenic diet, and the chemotherapy.

Dr. V. D. Washburn: (Wilmington) This Washburn family, either near or distant, having interested themselves in urology for both upper and lower Delaware, it is proper, I think, that upper Delaware should take part in this discussion. I regret that I did not have the privilege of reading the paper, and that I was late and only heard the latter part of it. I do want to add one remark in connection with a statement made by Dr. Washburn in the latter part of his paper to the effect that it was not good practice and sometimes actually dangerous to empty a bladder where there had been an actual retention.

We know from actual experience that people do die if we suddenly change the intravesical pressure. He suggested it might be drawn off or an inlying catheter be left and the clip be removed from time to time. I want to bring in at this point that a much superior and much more comfortable procedure for the doctor and the patient is that thing that we call the decompression apparatus, whereby the lower end of the rubber tube is placed just high enough with relation to the level of the bladder so that the urine comes over with each inspiration, and thereby the bladder is emptied gradually, perhaps in a matter of three or four days, and if the doctor is fortunate and skillful in fastening the catheter in and successful in keeping it in for several days, the patient is continually comfortable. The doctor does not have to get out of bed from time to time, or no one actually has to be in attendance to bring about what is undoubtedly a desirable thing.

I want to corroborate what Dr. Vallett said with regard to the desirability or the usefulness of the ketogenic diet in occasional cases of infection of the urinary tract, whether it be in the bladder or, where it is more apt to be, in the entire urinary tract. I don't use it very often; I don't think any of us can, because it is a difficult thing to get established in the average home, and there is where it has to be established. You may apply it very well in the hospital, but it has to be carried out over a period of weeks and months. I have been successful in following out the practice referred to by Dr. Vallett by changing the diet, because it has been demonstrated that the ketogenic diet produced bodies in the urine which are markedly antiseptic, actually superior to any antiseptics we may have at our command in the therapeutic field.

I noticed that in the conclusions Dr. Washburn said the cystitis per se is rare. I know that that is said to be so in the literature, and I realize that cystitis independently of infection of the urinary tract above is perhaps unknown. It certainly in my experience is not rare, and this leads me to say that in earlier years it was not an unknown thing for a man or woman to have urinary frequency and pyuria, and to have a long course of irrigations of the bladder on the theory that we were dealing with an inflammation of the bladder. We now know by experience and observation that over and over again this picture does not spell solely inflammation of the bladder. All the symptoms are to be found in the region of the bladder neck, and the real pathology is to be found in pyelitis and the more severe infections of the kidneys. So that today it is becoming the habit and the custom to refer these people for cystoscopic determination of whether or not the infection is really above or rather entirely to be found in the urinary bladder.

I think with one more thing I will close. That is this: I have long since reached the conclusion that the various urinary antiseptics that are to be brought to our doors and found in the market—many of them very expensive so far as every day commonsense usefulness goes, costing six and eight cents a pill—are only occasionally as good or as efficacious as an acidulation of the urine and the every day hexamethylenamine. Perhaps that comes from the fact that I come from a New England ancestry, and this idea of expensive prescriptions doesn't fit either in the patient's pocketbook or mine, but I know that clinically many, many times the cheaper preparation is not only equal but is sometimes superior to the more expensive preparations.

PROPAGANDA FOR REFORM

The Hospital Formulary.—The Council on Pharmacy and Chemistry reports that recently a committee issued a Formulary for the New York Hospital, and that an article by Robert A. Hatcher and Wendell J. Stainsby, which discusses some of the major problems of the Hospital Formulary, is in harmony with the ideals of the Council. According to the article of Hatcher and Stainsby, large hospitals find it necessary to limit the prescriptions of the staff mainly to selected formulas, and this system has tended to promote the use of proprietary formulas, which usually cost much more than official equivalents without corresponding advantage. The formulary of the New York Hospital was prepared by a committee, which invited representatives of every department to present formulas desired for their departments. In every case where a complex formula or a proprietary preparation was desired the advocate of it was requested to present evidence of its superiority over the equivalent official preparation, and unless such evidence was submitted the committee declined to admit the article, or, in a few cases, admitted it with the proviso that it would be deleted unless evidence was presented that would justify its retention in a subsequent edition of the formulary. As indicated in the rules, this does not interfere with the therapeutic study of any proprietary preparation, nor does it prevent the use by any department in the hospital of any substance concerning the superiority of which the staff is so firmly convinced that it is willing to conduct a scientific study of its uses, or to provide it at departmental expense. This plan requires for its fullest success a highly skilled pharmaceutical staff capable of cooperating with the medical staff. The training of men to fill the pharmaceutical positions in such progressive hospitals constitutes at once an opportunity, and a challenge to the schools of pharmacy, for there are few such pharmacists now available. (Jour. A.M.A., December 2, 1933, p. 1802)

The Administration of Thyroxine.—There can no longer be doubt that thyroxine represents the effective iodine-containing hormone of the thyroid gland. One of the puzzling features of thyroxine from almost the outset of its discovery and isolation has been the repeated observation of the inefficacy or greatly lowered effectiveness of thyroxine when it is administered by mouth rather than intravenously. At first thought one would expect the purified hormone to be quite as potent as an equivalent amount of desiccated thyroid gland. According to observations at Rush Medical College in Chicago by Harington and Salter the physical properties of thyroxine are such as to make it highly probable that the absorption of this substance after oral administration would be inefficient and erratic; the digestion product, on the other hand, possessing as it does a much wider range of solubility, might well be absorbed almost quantitatively. The Chicago clinicians conclude that solubility of the thyroxine compound administered would therefore appear to be important and destruction by intestinal enzymes must be considered; but only future work will determine whether or not some other factor, as yet unknown, is also to be considered. (Jour. A.M.A., December 2, 1933, p. 1805)

The Nichols Sanatorium—In Savannah, Mo. there has been for some years an institution known as the Dr. Nichols Sanatorium for Cancer. It was founded by one Perry Nichols who held a diploma from the University of the South Medical Department, Sewanee, Tenn., 1901, and who died in 1925. The Nichols concern, which, of course, uses the escharotic treatment, is the subject of an article by the Bureau of Investigation of the American Medical Association. According to the statement that has been made for many years, both before Nichols died and since, this has been vaguely described as: " . . . a double compound, about four times the strength of chloride of zinc plaster, or the arsenical or Marsden's paste, and acts with decidely less pain." In fifty-five cases of alleged cures of cancer by the Nichols Sanatorium that were investigated, it was found that all but three of the cases had been diagnosed as cancer, not by independent physicians, but by the Nichols concern itself. In the three patients whose cases were diagnosed as cancer by physicians, no microscopic examination had been made. Many persons, especially those past middle age, who develop benign growths, assume that such growths are cancer and on their own responsibility go to these cancer-cure institutions that advertise that they do not use the knife. There the patient is told that the condition is cancerous; the growth is eaten out with caustics, the wound heals, and the patient goes back to his home a living advertisement for the "cure" of a "cancer" that never existed. (Jour. A.M.A., December 2, 1933, p. 1817)

Hippuran—The Council on Pharmacy and Chemistry reports that Hippuran is a product of the Mallinckrodt Chemical Works, proposed by Swick for intravenous and for oral urography. Its chemical constitution is stated to be sodium ortho-iodo-hippurate. Sodium ortho-iodo-hippurate contains 38.8 per cent of iodine; it is said to be soluble in less than its own weight of water and to be stable in aqueous solution. It was chosen as a promising agent for visualizing the urinary tract, in view of the fact that hippuric acid normally occurs in the urine following the ingestion of benzoic acid, representing a conjugation of benzoic acid with glycine. Usually from 10 to 15 Gm. has been administered by vein in 40 per cent aqueous solution over a period of five minutes. No reactions have been noted except a sensation of generalized warmth, such as has been reported with other products used for intravenous pyelography. With a dose of 30 Gm., occasional vomiting has occurred. By the oral route, diagnostic pictures are reported to have been obtained 90 and 135 minutes after administration, in seven of fourteen cases. As the product has not yet been sufficiently widely employed adequately to determine its value, the Council has voted to defer further consideration of Hippuran until more evidence has accumulated with respect to its clinical usefulness, at which time the product will be examined by the A.M.A. Chemical Laboratory. (Jour. A.M.A., December 9, 1933, p. 1879)

Pyridium Omitted from N. N. R.—The Council on Pharmacy and Chemistry reports that Pyridium, the monohydrochloride of an azo dye of the pyridine series, phenylazo-*a*-*a*-diamino pyridine, was presented by Merck & Co., Inc. for the consideration of the Council in 1928, for use mainly as a urinary antiseptic. The evidence submitted at that time was judged to be unconvincing and the Council declared Pyridium unacceptable. Additional evidence was presented by the firm and, in view of the fact that two similar preparations, Mallophene (Mallinckrodt) and Serenium (Squibb), which had not been submitted to the Council at that time were being actively exploited, a recommendation that Pyridium be accepted for one year was adopted in April, 1930. In 1931 a new referee was assigned the task of reviewing the old and new evidence on Pyridium. He recommended reacceptance of Pyridium under severely limited claims and the Council adopted this recommendation. In 1932, after an extended investigation of the available evidence, the Council's referee recommended that the acceptance of Pyridium be revoked at once and that the product be declared unacceptable for continued inclusion in New and Nonofficial Remedies as a local, general or urinary antiseptic because claims for its therapeutic usefulness are not warranted by the accumulated evidence. The Council adopted the referee's report and authorized publication of a statement of its consideration of Pyridium. When the Council's report was submitted to Merck & Co., Inc., the firm replied in a carefully prepared and well documented brief which required further consideration by the Council. The thesis of the firm's brief was that Pyridium has become established as a useful remedy. After careful consideration of the material submitted by the firm, the Council concluded that, while Pyridium may have some value as an adjuvant in the treatment of genito-urinary infections, this is a very indefinite, indeterminable property of a substance recommended for its positive value as a urinary antiseptic. The Council decided that there does not appear to be sufficient basis for the formulation of conditions on which to grant a reacceptance of Pyridium and voted to reaffirm its previous decision to omit Pyridium from New and Nonofficial Remedies. (Jour-A.M.A., December 30, 1933, p. 2118)

Azophene (Mallophene) Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that Azophene (formerly called Mallophene) was presented by the Mallinckrodt Chemical Works, St. Louis, for consideration of the Council as beta-phenyl-azo-alpha-alpha-diamino-pyridine hydrochloride. Examination by the A.M.A. Chemical Laboratory had shown it to be identical with Pyridium. The Council, as a result of extended investigation, declared Pyridium unacceptable for continued inclusion in New and Nonofficial Remedies because the claims advanced for it as a local, general, or urinary antiseptic are unwarranted. Since Azophene and Pyridium are considered identical, and since, to the Council's knowledge, there exist no reports indicating that the former is superior in any way to the latter, the Council declared Azophene unacceptable for New and Nonofficial Remedies because claims for its usefulness as a local, general or urinary antiseptic are unwarranted. (Jour. A.M.A., December 30, 1933, p. 2121)

GESTATIONAL POLYNEURITIS

According to E. D. Plass, Iowa City, and W. F. Mengert, Philadelphia (Journal A.M.A., Dec. 23, 1933), gestational polyneuritis commonly follows or develops concurrently with hyperemesis gravidarum. There is a tendency to explain the symptoms on the basis of hysteria unless a neurologic examination is made, since there are usually no evidences of visceral disease. The cardinal observations include: (1) general weakness, more marked in the legs and in the extensor muscles, (2) sensory disturbances, (3) tachycardia for which no organic explanation can be elicited, (4) marked diminution or absence of the various tendon reflexes and (5) a psychosis of the Korsakoff type. The etiology is unknown, but the disease is variously explained as due to a toxin developed by the conceptus or to a deficiency in vitamin B intake. Pathologic changes in the viscera are scarcely significant, but degenerative changes in the peripheral nerves and spinal cord and petechial hemorrhages in the cerebrum offer an explanation for the neurologic manifestations. The prognosis is poor. If the patient survives the first two weeks, slow recovery usually ensues, but it may never be complete. Treatment is empirical and none too successful. Prophylaxis on the basis of high vitamin feeding offers the best hope for improving treatment. Therapeutic abortion is well advised but the results are frequently disappointing.

Cancer Comment

TUMORS OF THE SKIN

Marion L. H. Freeman,*
Wilmington, Del.

The skin is unique in presenting more kinds of tumor than any other organ of the body because of the various types of cells in it. The diagnosis of skin tumors is further complicated by a wide variety of non-malignant dermatological lesions. The types of cells composing the skin and the tumors arising from them may be summarized as follows:

Stratified squamous epithelium—Squamous cell Carcinoma
Hair follicle—Basal cell Carcinoma
Blood and Lymph Vessels—Angioma
Nerves—Neuroma
Sweat glands—Adenoma and Adenocarcinoma
Melanoblasts—Nevus and Melanotic Sarcoma
Connective tissue—Fibroma and Fibrosarcoma
Sebaceous glands—Sebaceous cyst and Carcinoma

All of these types with the exception of neuroma are illustrated in the thirty-nine completed skin tumor records of the Delaware Tumor Clinics.

The two following case histories are taken from these records:

Case 1—A white male, aged 57 years, presented a small ulcer 1 cm. in diameter on the right side of the bridge of his nose, which he had noticed first after a blackberry thorn had been removed from the site eight months before. The ulcer was red, with indurated edges. There was also an area of dermatitis behind the right ear of six weeks duration, which consisted of a narrow ulceration in the cleft surrounded by an erythematous zone. There was no induration or fixation of the skin to the underlying tissue. A biopsy of the lesion of the nose showed a basal cell carcinoma.

The patient was wearing spectacles with "white gold" frames which came in direct contact with the ulcerated areas, and it was suggested that they be discarded since they appeared to be an irritant. Eight days later the ulcer on the nose showed marked improvement and the lesion behind the ear had healed almost completely.

At this time Fox (J. A. M. A., 101, Sept. 30, 1933, 1066) reported a case of nickel dermatitis in which the eruption disappeared completely in three or four weeks after the use of "white gold" frames was discontinued. Because of the similarity of these cases it was decided to watch the patient for a short time before proceeding with any treatment.

Six weeks later both the ulcer on the nose and the post-auricular dermatitis had completely healed. Since the ulcer was small and the biopsy taken from the clinically most suspicious portion it is possible that all of the tumorous portion of the ulcer was removed at the biopsy.

The question arises whether or not nickel dermatitis is a precurser of basal cell carcinoma, although this point is not brought up by Fox. The case is being followed carefully in the tumor clinic and will be watched for any sign of recurrence.

Case II—White male, aged 79 years, had a "skin cancer" of the left preauricular region removed by electrodessication. No biopsy was done. The lesion apparently healed. Two years and four months later he appeared at the clinic with a subauricular mass on the same side of the face as the previous lesion. The overlying skin was intact. The mass measuring 4 x 5 cm., together with the surrounding tissue and the overlying skin, was widely excised. Microscopical examination showed a slowly growing radio—resistant carcinoma of sebaceous gland origin, invading the lymph nodes. It is unfortunate that a biopsy specimen of the primary lesion was not taken to complete the evidence of this very unusual tumor. If this had been done the proper form of treatment would probably have been clearly indicated. The metastases were presumably present at the time of the first treatment, over two years ago.

Since the natural history of the low grade carcinomas of the skin is about five years and metastases are slow in developing it is obvious that this patient must be observed periodically for at least five years before he can be considered cured.

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*Secretary-technician of the Delaware Tumor Clinics.

The President's Page

TO THE MEMBERS OF THE MEDICAL SOCIETY OF DELAWARE:

I wish to greet you and wish all a prosperous New Year. This may seem routine but I am sincere, realizing full well that we are in that period of a medical economic slump which is present throughout the country. I can safely predict an upturn for the better, however, and feel that when I leave this position we will be able to look back and realize that we overcame the condition, and took care of the people of Delaware from the medical standpoint as if no depression ever existed.

My aims as your president will be:

To bring the members of this Society into one cooperative body, working for the community along those lines which our profession is looked upon to take care of, and to disperse all those petty factional and political angles which are so wont to appear at various times.

To cooperate with the officers of the county societies, and assist them in any way that I can to increase interest and attendance in their respective societies. This, as you all know, is the function of the councilors, and I will likewise assist them in the performance of their duties.

To protect our Society against incringement in any form, and to continue the fight on medical racketeering that has had such success recently.

With these ideas in mind, I am calling on each and every one of you to cooperate, and thus assist me in making this year one of which I can justly feel proud and realize that I have attempted, as your president, to accomplish those things which are for the betterment, individually and collectively, of the Society.

Fraternally,

JOSEPH S. McDANIEL, M. D.

EDITORIAL

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Manuscript should be sent in typewritten, double spaced, wide margin, one side only. Manuscript will not be returned unless return postage is forwarded.

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Reprints of original articles will be supplied at actual cost, provided request for them is attached to manuscripts or made in sufficient time before publication.

All correspondence regarding editorial matters, articles, book reviews, etc., should be addressed to the Editor. All correspondence regarding advertisements, rates, etc., should be addressed to the Business Manager.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

It is suggested that wherever possible members of the State Society should patronize our advertisers in preference to others as a matter of fair reciprocity.

Subscription price: $2.00 per annum in advance. Single copies, 20 cents. Foreign countries: $2.50 per annum.

Vol. VI January, 1934 No. 1

Cancer Comment

Under the above caption we are inaugurating a new page of items of interest concerning the cancer control movement in Delaware. The material will be written by Mrs. Marion Freeman, the secretary-technician of the Delaware Tumor Clinics, and will consist of brief educational stories, interesting case reports, statistics, pathological data, news items, and other matters pertinent to the subject. We are under the impression that this cancer page, as a regular feature, is a new procedure in the state medical journals. We hope it may prove profitable to our readers.

The cancer control movement in Delaware is making commendable progress. Five clinics have been established recently, and their operations and the other parts of the Delaware program were discussd at the annual luncheon of the Delaware Committee of the American Society for the Control of Cancer, which was held at the Hotel du Pont, December 22, 1933. Thirty-four members heard the reports of the various committees, and agreed a splendid start had been made, and that enough had been accomplished to warrant the continuation of the plan for cancer control in the State along the present lines.

We have accumulated tentative records of over four hundred cases of cancer by using every source, from remarks made by patients attending clinics, to chance contacts. On two hundred and fifty of these we have complete histories on American College of Surgeons forms. About one tenth of these patients have been seen at the tumor clinics, and progress reports have been obtained from the physician on many more.

Since the estimated number of cases of cancer in Delaware is approximately 800, we have been fortunate in having located over half of them in the short time that this work has been carried on, approximately six months.

Seventy four specimens have been submitted to the tissue diagnosis service since February 1, 1933, and of these twenty-two, or thirty per cent, proved malignant. This service, which is free to any institution or physician recognized by the state, should prove an invaluable aid in the early diagnosis of malignancy. A pathological report on a biopsy specimen will assist the physician in deciding on the proper form of treatment, and is a permanent record to which he can always refer.

The morbidity reports, which should be mailed to the State Department of Health as soon as a diagnosis of cancer has been made, are a great aid in keeping our statistics up to date. It is important that we know the extent of our problem if we are to cope with it intelligently.

EDITORIAL NOTES

DEAR DOCTOR:

THE JOURNAL and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service.

It is absolutely *free* to you.

The Cooperative Bureau is equipped with catalogues and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in THE JOURNAL, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages, but if they are not, we urge you to ask THE JOURNAL about them, or write direct to the Cooperative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want THE JOURNAL to serve *you*.

To all our readers and friends THE JOURNAL extends its sincere wishes for a happy and prosperous New Year. What with the AAA, the NRA, the CWA, the PWA, all the way down to the XYZ we already have a noticeable improvement alphabetically; it is to be hoped that the improvement economically will keep pace.

We wish to revise our Directory page as soon as possible. Will all secretaries send us the latest list of officers, delegates, censors, and committees at once? We thank you.

Medical advertising again, and how! We have been regaled for years with that yarn about "all the surgeons of America have been rated, and Dr. Whoozis is the fourth (we believe the latest edition has it the third) finest in America," and we have smiled whimsically at the new one saying: "Mrs. Blank, of Erie, Pennsylvania, wrote to the Mayo brothers about her case, and the Mayos wrote back to her that Dr. Whoozis was the best surgeon in the East for her disease," but such twaddle pales into insignificance beside this gem which arrived in the mail the other day.

PUBLICITY
FROM—
.... Advertising Agency,
.............., Florida.

Dr. ...., leading x-ray specialist of .... and widely known for his research activities on x-ray, is at present recuperating at the .... Hotel in ...., Florida, from a lingering attack of pneumonia. As proof of his improvement, Dr. .... has lately reported several catches of game fish.

The pity of it is that the doctor named is a fellow of the A. M. A.; the only excuse for it is that his age is 76.

WOMAN'S AUXILIARY

A Message From Our National President

MRS. JAMES BLAKE

Greetings to one and all:

I wonder—have you ever heard the slogan, "Undertake less; accomplish more"?

Well, Mrs. Alice Ames Winter some years ago wrote a book, "The Business of Being a Club Woman", and I have borrowed her slogan. I do want you all to study this slogan, and try in our work to know what we do know as well as we can, and not merely skim the surface. The "Program" of "Health Education" work under Mrs. McGlothlan is the basis of all our Auxiliary activities, and wise is the state president who will follow the lead, "Undertake less, accomplish more". In every state the program committee is the most important. For the character of an Auxiliary depends upon its working program, and the program depends upon the characters of those who build it; how sincere of purpose they are; how well they understand the needs of their Auxiliary, and the community it serves, and how able they are to meet those needs. Every Auxiliary represents a cross section of community life. Through its membership it contacts one or more of the other groups that perhaps direct the activities of that cross section. It may be a home group, a church group, the social group or even a political group. To each of these groups our doctors' wives are contributing largely from the experiences that have come to them as community leaders, and if their program work in the Auxiliary has been in good hands, they have a wide range of material to offer. Every state and county in our nation is facing problems right now. Please, as Auxiliary members, study *your* side of every question before you move on with the masses. When the dredging crew arrives let us not be the ones who have rocked the boat. The Auxiliary woman of the future must be a woman strong in every sense of the word, not only physically and mentally but morally and spiritually as well.

It is a real pleasure to be sending you our first News Letter, and introducing you to your Press and Publicity Chairman in a friendly way. It is a long time since we said "Goodbye" to our many friends and Auxiliary people in Milwaukee, and many of us have had plenty of ups and downs since that day in June. But I am sure the inspiration of an Annual Meeting such as we have placed in our book of memories for Milwaukee will and has been helping many of us. Our state presidents, I trust, are all at work on their own specific plans for the year. Our National Chairmen are all at work helping in every way possible the state and county groups.

I am sure you will all be pleased to know that Dr. Rock Sleyster has been chosen by the American Medical Association as one of our Advisory Council, and Dr. Austin A. Hayden of Chicago has been selected to take the place of Dr. Walsh for the next few years. We are delighted to have these men planning our work with us, and keeping fatherly eyes on us at all times. From experience I know in these rapidly changing times, advice is good for the soul and keeps us out of mischief.

Mrs. J. Newton Hunsberger of Norristown, Pennsylvania is our supply lady this year, and from her you order your Treasurer's Receipt Blanks, your filing cards, if you are using them, and the "Hand Books". She also has charge of the files which Mrs. Freeman was so happy to correct and start on their way. After much discussion it was decided at the Milwaukee Meeting, to allow the filing of the State Membership Cards to be taken over by the individual states and not to keep a national membership file state by state, in the office of the President. States wishing their old filing cards may receive them if they pay the postage for their return. The work of keeping such a file from year to year is enormous, and would require a full time secretary on the job. And in the end it entails a great deal of extra work for the state officers. The membership file *will be kept* by the treasurer as in former years. The treasurer's receipt blanks are our up to date paid up memberships at the end of the fiscal year, and please, County Treasurers, get a good pencil, and write very plainly, and be careful of addresses, along with the correct spelling of women's names. And remember, Mrs. Hunsberger has our supplies, but please fill out her request cards promptly, so we can keep ahead of the game of supply and demand.

MISCELLANEOUS

Vitamin D Milk*

Dr. Theodore F. Zucker
New York City

Everyone knows how cod liver oil which formerly was a household remedy of indeterminate repute has of late years become a substance of the greatest scientific interest. All this is due to the discovery that the oil has dissolved in it a very small amount of a very highly active and very useful substance called vitamin D. It is this substance and not the oil itself which has the remarkable property of preventing or curing rickets. Rickets is not a disease of undernourishment but is a particular type of improper calcification of the bones. Let me tell you briefly of the work we have done in the study of this Vitamin D from cod liver oil and of some of the applications that have been found for it.

Since the Vitamin D is dissolved in the oil and the oil is inactive the simplest way of a first rough separation is to turn the oil into soap and extract from the soap the oil material which can not be turned into soap. This is called the non-saponifiable fraction and contains the Vitamin D. By this process, however, the oil is broken up chemically. To save the oil which is useful for many technical purposes it is first extracted with a suitable solvent such as alcohol which dissolves little oil but most of the Vitamin D. Then the alcohol-soluble part is turned into soap and the Vitamin D extracted from it. This concentrates the Vitamin D several hundred times but still contains much impurity. By repeating the extraction with suitable solvents and crystallizing out impurities and washing the product, a preparation can be obtained 15,000 times as potent in Vitamin D as the original oil. This while by no means a pure substance has lost the characteristics of fish oil and when incorporated in foods gives them a good Vitamin D activity without imparting any fishy odor or taste.

Everyone has also heard how sunlight can prevent rickets by creating Vitamin D in the body. When the artificial production of Vitamin D as a laboratory product was attempted by irradiation of certain substances with strong artificial ultra-violet light, it was found that a product of considerable Vitamin D potency was obtained but it did not have the same properties as the well known Vitamin D from cod liver oil. Dr. Steenbock, one of the originators of irradiated products, then introduced the terms "natural Vitamin D" and "artificial Vitamin D". More recently a form of Vitamin D has been created which much more closely resembles the natural form as found in cod liver oil by irradiating milk. These efforts in the direction of producing artificial Vitamin D by irradiation are very promising and will probably ultimately be very successful. In the meantime, partly as a necessary check on the work with artificial Vitamin D, we have been carrying on our studies on natural Vitamin D. As you can readily see, one of the problems involved is the purification of Vitamin D from natural sources. The principal interest in those studies lies in throwing light on the chemistry and the biological properties of the active substance but in following this objective we have not been unmindful of the possible practical applications. One of these is particularly interesting, namely the production of Vitamin D milk by incorporating cod liver oil concentrate in it.

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*An address presented at the Columbia Presbyterian Medical Center, New York City, before The Science Forum of the New York Electrical Society, November 15, 1933.

We could prevent almost all rickets in the entire population if we could get daily into the stomachs of all infants a suitable dose of cod liver oil. This, however, presents its difficulties. It is troublesome to administer, it is not always well tolerated, and most of all it may be forgotten. We get around all this by incorporating in the milk by a simple process the concentrate of the Vitamin D. In this way we get the useful substance into the milk leaving the oil to be used for industrial purposes such as tanning. The milk as fed differs in no way, by odor, taste or appearance, from ordinary milk but contains per quart the Vitamin D of several teaspoonsful of cod liver oil.

Careful studies have been made of the rickets-preventing activity of such Vitamin D milk. You may have heard that the irradiation product which goes by the name of Viosterol has not the same activity per unit as cod liver oil has. The unit is measured by a biological assay on rachitic rats and it has been found that in children it takes several times the number of units of Viosterol as it does of cod liver oil to prevent rickets. The Vitamin D concentrate acts unit for unit the same as cod liver oil itself and possibly due to better absorption when finely emulsified in milk it is even more effective. Dr. Barnes of Detroit has recently found that Vitamin D milk furnishing 50 units a day is fully sufficient to prevent rickets in infants. In chickens also where the usual irradiated products have such a low activity that they are not used in practice the concentrate is highly potent. No irradiation products have so far been produced with any essentially better activity in either children or chickens while most of them are distinctly inferior when measured in the commonly accepted units.

The milk is made up to contain 150 units per quart so that a good margin of safety is left for the exceptional cases which may be more refractory and also so that older children may also get a suitable amount in proportion to their increasing body weight. There is much evidence that Vitamin D has a marked effect on tooth conditions in children of school age. This subject is under intense investigation at the present time and all indications are that dental caries is, in part at least, controlled by the supply of Vitamin D in the body.

It is frequently asked whether, by insuring an adequate supply of Vitamin D, we are not running the risk of overdosage. This question must be answered carefully in view of certain laboratory findings and their interpretations. We can, of course, get harmful overdoses of any food or drink, of any drug or physical health measure such as exercise or sunbathing. It has been shown in the laboratory that overdoses of Vitamin D in the form of irradiated ergosterol can be poisonous but to produce symptoms it is necessary to give, according to conditions, at least, 1,000 to 4,000 times the rickets-preventing dose. If we take just a few times too much of any food or drug or say, sunlight exposure, we usually suffer and sometimes very severely so that the toxicity of Vitamin D is less than of most other things we might compare it with. To get toxic effects from Vitamin D milk it would take hundreds, if not thousands, of quarts a day. We see, therefore, that there is no immediate practical problem here. The reason why these effects of huge doses of Vitamin D are still being studied in certain laboratories is not in relation to nutrition or public health but rather to throw light on certain problems concerning mechanisms of pathological change in tissues. I mention this because several recent scientific discussions have in this respect been entirely misinterpreted in several press reports. It is possible that during the early days before the potency of Viosterol was recognized there were a few cases of moderate overdosage but even these accounts are largely questioned by competent authorities.

To demonstrate that with our Vitamin D milk there is not even a remote chance of overdosage we will state that the concentrate never gets into the hands of dairies in a form that might turn out to be dangerous. It is diluted to such an extent that one could drink a bottle of it without coming near the toxic range as established in the laboratory. All preparations are also carefully controlled by biological assay.

The assaying, however, is not done to prevent overdosage but to insure a sufficient amount in the milk supply. All batches of concentrate are checked by at least two laboratories and besides this the prepared milk is again assayed. For this purpose arrangements have been made with laboratories mostly in state universities or agricultural experiment stations in each state where the milk is on the market. The samples are secured usually by the regular milk inspection authorities and forwarded to the proper laboratory. The results are then sent to the state or city board of health. Several states now require that the number of units per quart be stated on the bottle cap and enforce this under the regular state food laws. In other cases the local health boards supervise the milk potency. We believe this assay control to be of very great importance. There are several kinds of reliable Vitamin D milks on the market now and there will probably be many attempts at spurious imitation. The milk does not differ in appearance or taste from ordinary milk and there are no simple chemical tests. Several states are now instituting official Vitamin D testing laboratories planning to take over the testing themselves. This is a new departure in food control and probably the largest volume of work will be in testing animal feeds but the most important part of it is the testing of Vitamin D milk. The countrywide distribution and proper control of Vitamin D milk promises to deal successfully with one of the most frequent diseases of infants and rid the growing generation of all the handicaps resulting from abnormal bone formation in infancy. This plan is not Utopian. It is probably not as difficult to carry out as was the introduction of widespread pasteurization of milk supply which is now a matter of history and has certainly vindicated the hopes of its early proponents.

STATE BOARD OF HEALTH

TREATMENT OF VENEREAL DISEASES

MEMORANDUM:

If funds permit, the Executive Secretary is authorized to make arrangements for the payment of physicians undertaking the treatment of indigent venereal disease patients under the following conditions:

1. The case shall have been reported in accordance with the Statute.
2. Permission to treat the case on the charge of the State Board of Health shall be asked for and obtained.
3. The preference of the practitioner respecting medical preparation to be used, (arsenic, mercury, bismuth, etc.) shall have been expressed.
4. Record of treatments given shall have been noted on the case report card obtained from the State Board of Health, together with reports of Laboratory examinations.
5. On presentation of the account accompanied by the above referred to case report card showing dates, quantities and form of treatment, payment is authorized on the scale below indicated.

Intravenous injections	$1.00
Intra-muscular injections	.50
Urethritis treatments (including medicines)	.50

6. If, after the completion of one course of anti-syphilitic treatment and the payment therefor, it becomes desirable to give more treatments, the case report card will on request be returned to the practitioner with the authorization for the continuation of treatment.
7. This arrangement shall not apply in respect of patients living within a radius of ten miles from a venereal disease clinic carried on by the State Board.

Approved December 26, 1933.
SIGNED:
A. C. Jost, M. D.,
Executive Secretary.

Dear Doctor:

The following procedure regarding tuberculin testing and x-ray study of school children is in compliance with resolution of the State Medical Society, adopted September 26, 1933. Explanation of these cards is as follows:

CONSENT CARD—5x8: Item #1 is to be filled in by parent, guardian or teacher. It is then submitted to parent or guardian for "consent" to have the tuberculin test given, or for refusal of the test. After #1 is signed (consent given) the card is brought to you (family physician) for your approval, and to be signed under #2. In case you do the testing, retain the card until the test is completed and the results recorded by you under #4. If the test is positive, use the 4x6 card for referring for x-ray. If test is negative, the line under #2 for x-ray reference is to be left blank, following which the card is returned by you to parent, guardian or school. In the event that you do not prefer to give the test, kindly fill in #2 and return. Item #3 is to be filled in by anyone having definite knowledge of the applicant's having been in contact with a known case of tuberculosis. Item #5 is for statistical purposes and is to be filled in by Brandywine Sanatorium.

The two, 4x6 cards are self-explanatory. One is for recording and reporting to you (if you did not give the test) the results of the tuberculin test and the other is authorization for x-ray study.

Cases who are able to pay are to be referred by you to a Delaware Roentgenologist of your choice for x-ray study. Brandywine Sanatorium will x-ray only those cases referred by you who are indigent as indicated under item #2 on the 5x8 card.

Additional notices will be mailed to all physicians in the community each time where tuberculin testing is to be done, giving date and place of testing.

Very sincerely yours,
Brandywine Sanatorium
Medical Advisory Committee
Delaware Anti-Tuberculosis Society

Dec. 28, 1933.

OBITUARY

William H. Hancker, M. D.

Dr. William H. Hancker, superintendent emeritus of the Delaware State Hospital at Farnhurst, died on December 29, 1933 at his apartment at the Delaware State Hospital, from a complication of diseases.

Dr. Hancker was born in Philadelphia in 1850, and was educated at Girard College, graduating in 1866. He was an apprentice in pharmacy at the Northern Dispensary of Philadelphia under Dr. D. D. Richardson, and graduated from the Philadelphia College of Pharmacy in 1870. He graduated from the Jefferson Medical College in 1873, and became the assistant of Dr. Richardson in the insane department of the Philadelphia Hospital and remained there until 1875.

He was appointed assistant superintendent of the Northern Hospital for the Insane at Winnebago, Wis., in 1875, and remained there until 1882, when he resigned and entered upon the practice of medicine. He was recalled to the Winnebago Hospital and served as assistant superintendent until 1890, when he accepted the appointment of assistant superintendent of the State Hospital at Farnhurst. He served as assistant superintendent for two years, and immediately after the resignation of Dr. D. D. Richardson, his stepfather, Dr. Hancker was appointed as superintendent of the Delaware State Hospital. On April 1, 1926, Dr. Hancker resigned as superintendent because of ill health. Since then he has served as superintendent emeritus on the staff of the hospital.

Dr. Hancker was a member of many medical fraternities, including the American Psychiatric Association (life member), American Medical Association, Medical Society of Delaware, and the New Castle County Medical Society. He was also a member of the Wilmington Whist Club, and of the Masonic fraternity.

His wife, Jennie Hancker, died on January 22, 1930. His sister, Miss Clara Richardson, died in September 1932. Dr. Hancker does not have any near relatives anywhere.

The funeral was held at Dr. Tarumianz's home at Farnhurst on January 2, 1934, with interment in Philadelphia.

1789—MEDICAL SOCIETY OF DELAWARE—1934

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NEW CASTLE COUNTY MEDICAL SOCIETY—1934

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Roger Murray, *Secretary*, Wilmington.
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Medical Economics Committee: W. Edwin Bird, Ira Burns, W. H. Speer, A. J. Strikol, Joseph P. Wales.

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E. Harvey Lenderman, *Second Vice-President*
John H. Mullin, *Secretary*
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KENT COUNTY MEDICAL SOCIETY—1934

Meets the First Wednesday

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SUSSEX COUNTY MEDICAL SOCIETY—1934

Meets the Second Thursday

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C. L. Hudiburg, *Secretary-Treasurer* Georgetown.

Delegates: J. B. Waples, G. V. Wood, R. C. Beebe.

Censors: W. F. Haines, G. V. Wood, W. T. Jones.

Program Committee: Bruce Barnes, James Beebe, K. J. Hocker.

Nomination Committee: R. C. Beebe, G. E. James, U. W. Hocker.

Historian: Catherine Gray.

Delaware Pharmaceutical Society—1934

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Albert B. Bunin, *Vice-President for New Castle County*, Wilmington.
Harry P. Jones, *Vice-President for Kent County*, Smyrna.
Edward J. Elliott, *Vice-President for Sussex County*, Bridgeville.
Albert Dougherty, *Secretary*, Wilmington.
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OLD AGE—ITS PREVENTION AND CARE*

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Premature senescence, or what is called old age, in contradistinction to true old age, is persisting or uncured organic disease. This is especially true of the cardio-renal system, and particularly when the blood vessels involved are in the brain, or in organs whose proper functioning is essential to the maintenance of health. The organic disease is degenerative in character, and is progressive, so long as its cause is not removed. Its cause is toxic matters circulating in the blood and lymph, and the process is usually a low grade inflammation with resulting fibrosis. Fatty change, calcification, etc. at times are complications of the scar tissue formation. These degenerative states are permanent or incurable, but if the supply of toxic matter is cut off at the source and those in the blood and lymph are eliminated the degenerative process is arrested, and the patient recovers. He becomes well in the sense that one is well who has suffered loss of tissue from an injury with subsequent healing with scar formation. He is well, but is more or less crippled. He must live upon a lower level of energy consumption and at a slower tempo. He is prematurely old.

The prevention of premature senescence or what is now called old age is identically the same as the prevention of sickness, whether functional or organic in nature. The best time to prevent it is before it has begun, through right hygienic living. This is so simple as to appear, at first sight, to be "too good to be true."

A sufficient mixed diet supplies not only the necessary calories but also all of the known vitamines, and doubtless others not yet discovered, as well as all other food elements needed for the adequate nourishment of the body. A sufficient, mixed diet is a term easily understood by the house-wife and is free from the objections inherent in the fear producing terms calories, and vitamines—fear producing because strange, new, and not understood by her. The study of the vitamines is a promising field of investigation for physiological chemists, and the results they are obtaining are a valuable addition to the science of medicine. Calories and vitamines, even in the present state of incomplete knowledge and understanding concerning them, especially the vitamines, are proper subjects for the practitioner's thinking, but he should not inflict them upon his technically untrained clientele to puzzle and worry his women patients. He would be better employed in teaching them how to make and to use French soup, which with eggs, bread and milk—butter and cheese, contains them all, and which has been the basis of the nourishment of continental Europeans "since the memory of man runneth not to the contrary." They have done their work upon it, and their armies have fought upon it, before, during, and since the days of Napoleon, who considered the soup pot to be one of the fundamental elements in successful warfare.

Sufficient liquids should be drunk to depurate the blood of toxic matter, whether the waste products of metabolism and other functionings or foreign poisons which have gained entrance to the blood, and to maintain the physiological water balance of the blood and tissues. "Sufficient" is a variable quantity, and depends upon the weight of the body, and the amount of work done. When used as a preventive measure by those in health, the question of a tendency to water retention or hydration of the tissues does not obtain, and may be disregarded. This statement is made upon the basis of a gynecologists experience. He does not see cases of injuries to the brain, nor of dropsy. They would be exceptions. When doing hard work in the summer time, when perspiration is free, the quantity needed, as indicated by thirst, is extreme—quarts. Under ordinary conditions the quantity has varied from six to fifteen glasses in twenty-four hours, in the author's experience, as tested by the absorption of liquids from the stomach. When too much is taken, it remains in the stomach and causes a feeling of fulness in the epigastrium. No other ill consequence has been noted after an experience of more than forty years in the free and systematic administration of liquids. Small women, especially the congenital defectives, who are leading inactive lives, need the least—six glasses of liquid, including coffee, tea, soup, and gruel, as well as water, is not infrequently sufficient. In them, the blood and tissue chemistry—metabolism is inactive, and they excrete a minimum quantity of water through the skin and lungs. It is not improbable that those having a constitutional tendency to water retention require less water than others, even when in health. This would be indicated by the slow absorption of liquids from the stomach, giving rise to a sense of fulness--a sufficient clinical warning to enable the practitioner to avoid giving them too much. The recently acquired knowledge concerning relative dropsy—hydration of the blood and tissues should be valued for what it teaches, and applies strictly to those patients who both have the tendency, and in whom the kidneys prove to be incompetent to excrete the excess of water. The unfortunate tendency of the profession "to go to extremes," and to project a teaching into fields to which it does not apply should be avoided. This new knowledge cannot be substituted for well established and soundly based physiology. A new "fad" should not be permitted to develop.

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To maintain health, to keep the body, mind, and spirit in good functioning condition, exercise is essential. The proper quantity, and the best variety differs in different individuals, and this depends upon the nature of the individual constitution. It is modified by the generations-long habits of the family stocks from which the individual is sprung. For example, one whose forbears were "close to the soil," whether upon the farm, in the forest, or doing other forms of manual labor, requires vigorous exercise in the open to maintain full health. Through long usage the bony and muscular development, and doubtless also the other organs, have become adapted to this form of life. It is easy to recognize such individuals through their heavy bony framework and musculature. They have a sturdy look, as being able to do heavy work. Unless of lethargic type, such individuals are not only benefitted by active exercise but also they enjoy it. When young, they take naturally to athletic sports, and if temperamental (capable of enthusiasms), make fine athletes: have a similar satisfaction from the skilful use of their muscles to that which an intellectual man has from the use of his intellect, and imagination in either solving or portraying a problem. On the other hand, one belonging to the group of congenital defectives, or to that having defects of both hereditary and environmental origin is injured by vigorous exercise. Such individuals are incapable of generating more than a moderate amount of energy, and either exercise or work which would be beneficial to the average man leads to the exhaustion of their very small supply of reserve energy and brings on exhaustion states. They are benefitted by exercise or work light in character, and strictly limited in quantity. They must be made to understand that it is essential to the maintenance of their health that they learn the limit of their small, or, at the most, moderate, capacity, and undertake to do only that which is within it, no matter what others are doing. Those whose forbears for generations have not done laborious work profit most from the lighter forms of exercise, especially those in which the elements of skill, and sport enter. Exercise of a dull, routine character is distinctly inferior to that which has a purpose, and which involves, skill, sport, or competition. Such exercise is interesting, and enjoyable. Walking in the fresh air is the foundation of all good systems of exercise. Swimming is said to be the best single form. Horseback riding, sport, and games rank high: all include the benefits of fresh air and sunshine. It should be unnecessary to say that the history of a patient should be taken, including his habits, and the nature of his work before prescribing a particular form of exercise, lest the physician find himself in the position of him, who, according to the story, prescribed walking for a "run down" patient, and later learned that he was a post-man.

Elimination of waste and other poisonous matter contained in the blood is taken care of automatically, under the control of the autonomic nervous system, and this is true of a minority in the elimination of poisonous matter from the bowel. Unfortunately, volition, carelessness, and false convictions interfere in the keeping of the human sewage system properly drained. Were it not for the function of the cells of the bowel mucosa in overcoming the action of the law of osmosis, and of the liver cells in destroying such poisons as gain entrance to the portal blood in, probably, about half of the population when less than forty years of age, the health of our people would be much worse than it is.

It is the habit of the mammals to empty the colon after eating. This includes the domesticated animals. It also includes an undetermined percentage of adult human beings, as was found by the author when he interrogated a large number of notably energetic men. And what is far more instructive, it includes healthy, breast fed human infants, whose habits are natural, and whose colons are emptied shortly after nursing. They are not yet old enough to have been taught wrong habits by their mothers. The present generally held belief that emptying the rectum once daily adequately eliminates poisons from the human sewage system is erroneous. It must be given up. The colon should be emptied from two to four times daily, and the status of being "walking cess pools" elminated from human experience. What man of sense would maintain an inadequately drained cess pool with leaky walls in the middle of his house? And yet most human beings live with such a cess pool within their bodies. Their faith in the goddess luck may be sublime, because of its immensity, but it is not in accordance with either reason or common sense.

Finally, a reasonable control over the emotions should be cultivated until success is attained. The feeling tone in consciousness should reflect a sense of well being, serenity, cheerfulness, hopefulness, and courage. Despondency, anger, covetousness, jealousy—all included in morbid fear should be combated, and not be permitted to reside in (even though they may gain entrance to) consciousness. *Errare est humanum.* Entire success is not to be expected, but fortunately, each man's margin of safety will take care of minor errors, and health can still be maintained. It is a fact that to gain and to maintain a reasonable control over the emotions is far more difficult than it is to follow the other rules essential to the health of the body, mind, and spirit of man. The process should be begun in early childhood. The child should be assisted by the parents. Self-expression is especially harmful in the emotional field, since it leads to bad habits, which if allowed to persist result in the development of self-will or wilfulness, the habit of having one's own way, and the determination to have it, irrespective of the rights or of the comfort of others. This is extreme selfishness, and its fullest development is called demoniac possession. "Whom the gods would destroy, they first make mad." The conduct of such persons inevitably meets with opposition, or with counter attack, which brings it about that they live in a turmoil of morbid emotions, which are heightened by the fact that such people become blind to their own faults, and blame others for their own evil doings. They are human devils, and a curse to themselves and to all who come in contact with them. The present social obsession, largely brought about by the teachings of certain modern alleged-to-be psychologists, that children should be encouraged in self-expression, on the alleged ground that otherwise they will develop morbid repressions, is much to blame for the current increase in lawlessness in the young, with, apparently, utter lack of respect for authority of all kinds. Would it not be well for these, at least, relatively, mistaken teachers to teach the advantages of self-control, and to begin its practice by controlling their own worse than mischief-making activities? Those of this school might reflect with advantage concerning the evidence presented by the lives of those who are past middle age, in whose childhood self-control and respect for authority was still taught. If the modernistic teaching were true, all, or almost all, of these older people should have suffered from morbid repressions.

The practice of deliberately shutting out of consciousness feelings and thoughts of a morbid character, as a habit, is to be recommended. For those who are religious, in the orthodox sense, there is a short cut to accomplishing this. Indeed, it is the natural consequence of this form of faith or belief, since all is divinely ordered, and to be willingly accepted as being for the true good of the believer. The author has had a few patients whose serenity, and even cheerfulness under most distressing and painful circumstances could be accounted for in no other way. Otherwise, he has found nominal Christians to be even as other men when subjected to the cares and distresses of life in the field of the emotions, and especially those brought about through disease. This experience has led him to respect the acumen and the judgment of the commission which was sent by the Japanese government to investigate and report concerning the effects of Christianity as a system upon the daily lives of professing Christians, in Europe and America, at the time when that government was considering whether or not to make Christianity the national religion. In brief, the report was that on Sunday people went to church and practised their religion, but that during the remainder of the week they were business men.

A physician necessarily comes to know the phenomena attendant upon the hour and article of death. Neither the manner nor the speech of those near death has indicated that their beliefs or their non-beliefs were concerning them more than is true of those pursuing their daily walk and conversation. The evidence of remorse was observed in a solitary woman. When told that the chances of her recovery were remote, she became terrorized. She was afraid to die. All others, as the forces of life gradually failed, progressively lost interest in the affairs of life, and if they concerned themselves about anything, it was about their present discomforts. As they approached the gates of death they entered their final earthly sleep even as do the beasts of the field. Death was as natural for them as was their birth, and appeared to concern them no more.

It is important for intelligent people to know the facts of the emotional life, and for all to know the harmful consequences of morbid emotions, including their causative relation to the beginnings of disease. All this is especially true of physicians, not only for their personal good but also that they may be able to instruct their patients. It is the author's conviction that this is the most promising field for the future development of preventive medicine. If disease be prevented, not even its beginning, malfunctionings of vegetative life or disorders, malaise, disease, disordered coenesthesis or, so-called, functional disease will require curative attention, and the infections, both surgical and medical, being secondary diseases, with apparently a few exceptions, will relatively seldom trouble either the patient or the physician, and congenital defectives will constitute but a small percentage, instead of about one-third of the population, as at the present time. This is the field with which the medicine of today has scarcely concerned itself, and which it has been one of the main purposes of the author to bring to the attention of the profession, and to do all that within him lies to assemble and present the evidence which shall carry conviction to physicians that this field of investigation, and of practice, now largely neglected, is one which gives every promise of bringing the greatest good to mankind through therapeutics both preventive and curative, and, incidentally, of reestablishing "the family physician," in his rightful, historic position.

For the physician, from the standpoint of prevention, and in the early stages of emotional disturbances, probably the best method of approach is to teach his patient a true philosophy of life, so that he may altar his objectives, when this is called for, and his attitude towards the problems of life, and learn how he can meet them, and at the same time maintain his health, especially the health of his spirit or psyche. Moderation in all things is the *summum bonum*. Excess is always harmful, probably more so than doing little or nothing or apparent laziness. Excess included overweening ambition, the speeded-up tempo of living, permitting one's self to feel hurried, driving one's self, and yielding to emotional reactions. One should work naturally, according to the physiology of his own constitution. In this way efficiency is promoted, more is accomplished, and health is maintained.

A true sense of relative values is of primary importance. An undue estimate of the value of money as compared with the value of health, of the importance of pleasure, so-called, commonly excitement as compared with happiness, and of economic or material values as compared with human values commonly leads to a misspent life, and to disease. The native toughness, or the reverse, of the particular constitution conditions the outcome.

The habit of "letting the mind dwell upon unpleasant matters" or brooding over one's troubles is pernicious, and disease producing. The patient should be taught that it is not adverse, annoying, or materially injurious environmental influences that make him sick, but his own unwise reactions to these influences. Through his own unwisdom, he makes himself sick, and makes matters worse by blaming his sickness upon adverse circumstances, or upon people who have done things he has not liked: that it is his own attitude towards life and its problems, usually, which either makes him sick or keeps him well. Morbid emotions or morbid fear makes him sick either by overstimulating or by inhibiting parts of his autonomic-chromaffinnic system, thus disturbing the functionings of vegetative life, or by inhibiting his reason whereby he becomes the victim of an obsession. This should be made clear to the patient.

To tell a patient in the grip of morbid fear that he should not worry is foolish advice, only less foolish than is the physician who gives it. Instead, he should be so managed that his consciousness is occupied with thoughts and feelings that are wholesome. This is the purgative method. It is more successful when the advice is given without explanation—merely telling the patient that it is for the good of his or of her health. Commonly, it can be more successfully managed through a friend. Perhaps, nothing is more curative for a woman who is beginning to brood over her supposed troubles, or actual difficulties, than "a good gossip," at regular and not infrequent intervals. This counteracts the tendency to become self-centered. If through a friend or a relative it can be learned who among the patient's circle of friends is the most entertaining gossip, and at the same time a wholesome, good hearted, and sensible woman, and it can be brought about that this gossipy friend shall cultivate the patient, and see her frequently, not seldom nothing else will be needed, except perhaps stimulation and encouragement from the physician.

Before the beginning and in the earliest period of exhaustion states, the patient should be encouraged to keep busy. Work of a kind that requires fixation of attention or concentration in order to accomplish it is the most generally useful measure, and this is most true of work which engages the interest, or the liking of the patient. By keeping consciousness filled with wholesome thoughts and feelings, especially those which concern the welfare of others, those that are morbid have difficulty in gaining entrance. Besides, enough work to make an individual tired promotes sleep—nature's restorer. A reasonable amount of diversion is advantageous, as a change from routine, and because of the social contacts it brings about. Both are eutrophic. For women, to stimulate an interest in dress, or in their appearance is often beneficial.

To cultivate a talent, whether in the field of art, or another field, is not only good in itself but also promotes wholesome feelings. When a patient has no special talent, it is well for him, or her, to take up and pursue a hobby, or a handicraft. This diversifies the interests and takes up time which otherwise might be spent in brooding over the ills of life, whether actual or imaginary.

For those in the grip of fear, when exhaustion states have begun to develop, a resort to "literature of escape" is often beneficial, especially detective stories, and stories of adventure, which tend to engage the attention, while making little demand upon the intelligence, and, most of all, as not requiring concentration. At this early period, travel, especially if it can be arranged that the patient shall be accompanied by a wholesome, intelligent friend, with a large and many sided personality, who can assume direction of what is to be done, and take over the cares and annoyances of travel, is often advantageous: or a stay at the seashore, or in the country, depending upon the time of the year, and even more upon the particular patient's tastes. That plan is best which promises to interest the patient most, and to substitute wholesome thoughts and feelings for those which are morbid—cheerfulness, hope, and courage for discouragement, brooding, and depression—to eliminate morbid fear.

It becomes evident that the prevention of what is now called old age—the same as the prevention of disease comes within the resources of the general practitioner. But little specialized or technical knowledge is necessary. Knowledge of a general medical character, of biology, and, especially, concerning human nature is far more important. What is most important is intelligence, good judgement, and a kind heart. These qualities are as apt to be native to the family physician as to the specialist, and the experiences of family practice, especially in the smaller communities, and in the country are most apt to bring them to their fullest development. The author long ago realized that the dozen physicians, among the large number who referred patients to him as a specialist, whom he regarded as being "the best doctors," all but two, practised away from large cities. Two of them lived in hamlets. Their patients were more thoroughly studied, and they showed a better understanding of both the patients' diseases, and of their constitutions than is usual. In limited fields, city physicians have greater special knowledge and skill, but they are too close to consultants for most of them to cultivate their innate powers to the full. Facility in obtaining consultations, a large reliance upon information gained through the laboratory, and upon that supplied by the use of technical apparatus tend to prevent the adequate use of the powers innate in the practitioner, or, in other words, tend to prevent the education (in the true sense—*educo*), of the physician, or to render him a less intelligent, and a poorer clinician than he was capable of becoming. He has less clinical insight and understanding. The author can conceive of no more truly educational experience for a young physician than to practice for some years in a small community. This would be aided if there were an active county medical society, and a well managed hospital not too remote. He should become a good, and a self-reliant clinician, unless innately deficient in ability.

All of the measures, or certainly all but one, necessary for the prevention of disease, which includes the prevention of premature senescence, are simple in nature, and easy of application, provided the physician is capable of gaining the trust, liking and confidence of his patient. The one which is more difficult is securing a reasonable control over the emotions on the part of the patient. The same is true of the necessary curative therapy. In this field, The Spirit of Kindness, much aided by a large, or a dominant personality, is essential to success. Without these qualities, in this field, the practitioner will be a failure, and the same is true of the specialist—no matter how much his knowledge may be. An exception might be a towering genius, with a corresponding reputation. These, alone, might inspire faith in the patient.

In the field of curative therapy, in the earlier stages—primary disorders, and primary disease or toxaemia the same course of management which prevents disease will bring about a cure. When secondary disease—the infections, either surgical or medical, develop, and this is also true of the primary infections—the exanthemata, and a few others, the therapy of current medicine is indicated, but at the same time the primary disorder, or the primary disease should receive appropriate treatment, thus simplifying the problem, and improving the prognosis.

Foot Note.—Those who are accustomed to limit their medical thinking to the factual knowledge, seen in detail, which characterises the present era, and which is largely mechanical in nature, may question whether some of the matters which have been discussed belong to medicine. But they belong to The Art of Healing as the author has practised it, and especially to the art of therapeutics, both preventive and curative. Whatever social customs, and whatever personal habits, either psychic or somatic, unduly disturb the emotions, and through this disturb the functionings of vegetative life must be regarded as belonging to the causes of disease. And whatever throws light upon the nature of human constitutions, in general, and upon the nature and workings of human personality in the individual is an integral part of medicine. Hence anthropology, and ethnology—the customs of mankind at different periods, and at different stages of the development of civilization—the history of the *mores* of humanity, of human cultural inheritance, pre-history or legend and history as showing the relations between the *mores* of a particular period and the status of the people concerned, and the literatures of the different civilizations of the past five thousand years which form the basis of history are all included in the foundations of medicine, and form the background of knowledge and understanding which lead to insight and comprehension—clinical wisdom concerning the constitution, personality, and tendencies of a particular patient. It is through this insight and understanding together with the sincere desire to be helpful that the physician is the better able to manage and to guide the patient away from false ideals and habits which have led to disease, and towards those which promote his welfare and his health. It is the most important part of the art of the clinician. Understanding concerning the workings of human nature and the wellsprings of human conduct is the very foundation of clinical wisdom. It is because of this that the problems associated with the curative management of patients have been discussed, although some of these problems are fully as much social as medical. The author is quite aware that although this point of view is absent from current medical teaching, and, largely, absent from current practice it is not new. Indeed, the father of medicine, himself, Hippocrates, taught that it is more important to understand the nature of the patient than the nature of his disease.

Discussion

Dr. W. E. Bird: (Wilmington) We have listened to a very interesting and illuminating paper, on a new subject. The statement that the doctor makes that I can agree with the most is that the study of old age is relatively new, the newest in the specialties. Technically, it is called "geriatrics." At the beginning of life, pediatrics; at the end, geriatrics. What we have yet to learn in this field probably is many times what we now know. Yesterday we thought that man was as old as his blood vessels, his arteries; today we think he is as old as his ductless glands. What we are going to think tomorrow, deponent sayeth not.

Dr. O. V. James: (Milford) I want to congratulate Dr. Noble on his fine paper on a subject we all ought to be interested in, and I think he is quite right in stating that it is a subject that we hear very little about, but one which concerns us all, particularly if we are going to live very much longer. There are a few things about it that I feel like emphasizing. One is the importance of cleaning out, cleaning up, and keeping clean the intestinal tract. I think a great many of our conditions, our diseases, have their incipiency in a sluggish intestinal tract. I was very much impressed with the importance of flushing out the eliminative organs and in the intake of fluids which he wisely demonstrated.

Another thought, which I think has been neglected by the medical profession to their detriment, is the importance of the condition of the mind with relation to the physical functioning of the body. I think we have neglected that. We are concerned—and I am speaking from my own experience in times past—with the physical condition of the body, our clinical symptoms and physical findings, but we do not place proper emphasis and consideration upon that patient's mind. We find that the so-called Christian Scientists take advantage of that very fact, and they are taking patients from the physicians, and if the physicians would but employ that media they could retain them with benefit.

Dr. W. O. La Motte: (Wilmington) Mr. President, I would like to ask the internists here whether normal bowel movements depend to a large extent upon the place the person lives and the kind of food he eats. I heard a distinguished New York physician refer to the habits of the cow. He said: "If you notice, the first thing a cow does when she gets up is to have a copious movement, and then she goes to the trough and fills herself with water," and he thought that we should eat the kind of food that would enable us to have a large number of movements a day, pretty similar to the cow.

Now, there was an article published in the Journal of the American Medical Association by someone who had investigated the health of Eskimos and others in that country—all he could get together and examine—and he couldn't find any kidney diseases. It seems to me he didn't find many heart diseases, maybe one or two of them.

I was at a dinner one time in New York, and at my table sat a literary man, and he spoke of his experience in Labrador, where they live on meat, you know, and fats. He said when he first went there his bowels didn't move as he had been in the habit of having them move. He went about a week and became worried, but the natives told him that was all right up there. In that part of the country on the kind of food they ate, they were normal if they moved about every three or four weeks. So, he said, he went about three weeks and then he had a bowel movement. They don't have any trees or logs there, and he said he took his camera and got close to the bowel movement, and he sent that card to the librarian in New York and told him to label that: "The only log in Labrador." (Laughter)

Dr. M. A. Tarumianz: (Farnhurst) I am sure I haven't time to discuss the fine paper of Dr. Noble's, if it weren't that he criticised the modern psychologist and psychiatrist. I don't think it is fair to criticize them. I think the doctor's paper was a fine philosophical piece of work. There is no question about it but it was philosophy based on his experience only. There is no question in my mind but that most of his statements were true and known to every physician who is practicing medicine, and that every physician is endeavoring to adhere to those principles which have been almost part of our lives from the beginning of our practice, but it seems to me that the statement of purging is paradoxical; the statement of toxemia is quite paradoxical—paradoxical because if you remember a few years ago—I think it was 1919—Dr. Cotton came here and gave a paper stating that all the mental diseases are caused by toxemia, and therefore remove all the infected teeth and infected tonsils, and if necessary, remove part of the intestinal tract. Remove the toxemia and you will have a cure for all the dementia praecox cases in the world.

Naturally Dr. Cotton presented this in a very fine way. He presented many cases that were apparently cured. Those cures have been established in other hospitals going into that particular field of toxemia. Dr. Cotton recently died from toxemia himself. So you see it is paradoxical. Toxemia has never caused more than one percent. of mental cases in hospitals, that I know of.

It is true that it is proper for anyone to have adjustment of his bowels, just the same as he adjusts himself to life, adjustment to all difficulties that he is confronted with, but I don't see why we should pay so much attention just to one portion.

Psychiatrists have taught one thing, and I think the general practitioners as well as other specialists should be thankful for that one thing: that mind, the central nervous system, plays a tremendous role in every disease, and therefore we should consider mind as of paramount importance. I don't think it is a lot of foolish talk about psychiatrists and psychologists. I wish that our teacher Adolph Meyer had been here to listen to Dr. Noble's talk. In his smiling way he would have said: "Maybe you are right in your own way, thinking in your own way, but certainly we have proven that psychiatry has played a tremendous role in the practice of medicine." It is one of the most vital branches of medicine. It is accepted not only by the United States and by the professions of the United States, but all over the world.

DR. P. W. TOMLINSON: (Wilmington) My long acquaintance with Dr. Noble leads me to feel that it is incumbent upon me to have something to say regarding his paper. There are causes for advanced years. Some of us find out about it.

"A wonderful river is the stream of time:
 It runs through the realm of tears,
 With a faultless rhythm and musical rhyme,
 With a broad sweep and a surge sublime,
 As it blends with the ocean years."

I think Dr. Noble's paper was full of thought. It may seem so trivial that many of us pass along without giving it much consideration. Now, this river we can individually lengthen or shorten, and I know of no more important factor in the lengthening of this river than cheerfulness. Cheerfulness is good in any realm as coinage, and will pass at par in every land. If we are cheerful we are hopeful, and if we are hopeful we are cheerful. The things to fight against are those things which depress us, keep us in a sorrowful mood.

There are some things that money can't buy. It won't buy that rich afterglow that comes to him whose life's sun is setting in glory behind the western hill. Personally, I have never had any ambition to become wealthy. My observation has been that wealth without something else brings comparatively little happiness and contributes in a very small way to longevity.

I am frequently asked—having been allotted a lifetime of the average span of years—where the fountain of youth is that I have visited. I tell them that one name for that fountain of youth is good behavior, being temperate in all things. I have never dieted; I have eaten and liked most anything that other people eat and like. I have never been a teetotaler, nor have I been a drunkard. Most of my life when I have felt tired I haven't hesitated to brace myself up with a glass of good rye whiskey.

I have been fond of the out-of-door life, which has been very fortunate for me. I love to roam the fields, the woods, and forest streams. I never was much of a fisherman, hadn't the patience to wait for those bites that come so far between. I used to be fond of shooting, but I had to give it up when I found that my legs refused to carry me over the fields as they once did. My chief hobby has been riding to the hounds. Their music is sweeter to me than the finest orchestra music I ever listened to. That has given me due exercise, sometimes a little over-exercise, but with it there was a thrill, something invigorating about it. I still follow the hounds but no longer on horseback, because a fall to me now would be more than it would have been forty or fifty years ago. I have been indulging in that sport for over sixty years. I think perhaps a fondness for it has been inherited. Several of my uncles when their work was done in the fall followed the hounds, and I was initiated into the sport by visiting them.

I was looking around yesterday at my friends Dr. Springer and Dr. Bishop, and if I had looked at the white hair of my friend, Dr. Bringhurst, he would have been included with the octogenarians, and the thought came to me while I was looking at these old friends, that we have been abundantly blessed, but I also had this feeling:

"I feel like one who treads alone
Some banquet hall deserted,
Whose lights are fled, whose garlands dead,
And all but these departed."

I have no special regrets to add, or sorrow at the decadence of life, and I can truthfully and sincerely quote the lines of Ida Tarbell:

"Life, we have been long together
Through pleasant days and through cloudy weather;
It is hard to part when friends are dear,
Perhaps 'twill cost a sigh, a tear;
Choose thine own time, then come with little warning;
Not good night to say, but in some brighter clime
Bid me good morning."

Dr. Willard Springer: (Wilmington) He must have pointed at me because I am an old man—not as old as my friend, Dr. Tomlinson, but I am a year older than Dr. Bishop. I am not going to make a speech or quote poetry or anything else, but I have been around women a great many years and with a great many doctors, and they frequently ask me what I do to keep myself in such good condition, and I give the same answer, and I have given this same answer for a good many years. I say I never did anythink to excess, except that a good part of my life I worked pretty hard reporting. I have taken a drink when I wanted it. I have smoked moderately. I have had plenty of sleep, and no doctor need tell me that he can't get the sleep. He can get it if he goes to bed early, but he won't go to bed early. I have always been in the habit of going to bed early and getting up early, and taking it as easy as I can through the day. And I always wind up my advice to them by telling them that one woman has always been enough for me.

Dr. Tomlinson: I would like to add something to what he has said along that line, that Dr. Springer has been regular in his habits.

I learned years ago that the neighbors whose clocks had run down at night would wait until Dr. Springer left his office door and then they would set their clocks at nine o'clock.

THE FAMILY DOCTOR, AND HIS RESPONSIBILITY TO THE PRE-TUBERCULOUS CHILD*

Joseph P. Wales, M. D.
Wilmington, Del.

Mr. President and ladies and gentlemen: were it not for the importance of my subject I would feel like the tail of a kite this afternoon. Dr. Dyer's paper has given me a bit of thought. If we could apply the principles of birth control to the tick family, we might stamp it out. That is the only reason I see for it up to date.

Gentlemen, in all times of great disaster and accompanying loss of life, aid is rushed to the afflicted spot by order of national or local authority. In other words, an emergency has arisen and has to be dealt with immediately. I think I can say without fear of contradiction that such an emergency exists here in our state today, and in the entire country, to a certain extent, also. I refer to our mounting death rate from tuberculosis. This is not surprising to those of us who are familiar with the situation, when one thinks of the past four years of depression with its accompanying poverty, which implies, of course, poor food, insufficient food, poor housing, etc. The increase, however, is most disquieting.

Increase in death rate carries with it the definite fact that there are more undiscovered cases of tubercular infection among the general population, and especially among children. Now, the school child, of course, is readily accessible. Under our present system of school examination, as soon as a child enters school we can discover and do discover a great many defects that haven't been discovered during the pre-school part of his or her existence. It is the pre-school child, however, that is not anywhere near as accessible as the school child, and frequently such things as infected tonsils, adenoids, cardiacs, tubercular conditions, etc., are not discovered until they do reach the school age. That is not necessarily the fault of the mother or the fault of the family physician. They are living in a sense of false security probably in regard to that individual child, thinking nothing is wrong with it until it may be too late to correct any evil which has arisen during that period of its life.

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*Read before the Medical Society of Delaware, Wilmington, September 26, 1933.

Now, for the discovery and correction of this condition we have to rely on the family physician, and I hope and trust it will be the physician around whom discovery and treatment of these cases will fall. In other words, I hope he is going to come back to his own in this age of over-specialization—the family physician. On him we must depend.

This summer we had several meetings of the Anti-Tuberculosis Society, and we evolved the following plan for the finding out of these latent cases, let us call them. Let me read you this partial investigation which we have already made.

Out of 329 who were tested in Dover—and by tested I refer to the skin test—the positive actives were 148 out of the 329, or, in other words, 45%. One hundred and thirty two of those cases were x-rayed. Of these, six active cases were discovered of the childhood type, seven of the adult type, and nineteen highly suspicious cases which are to be investigated and checked up on later.

Now, gentlemen, that is a small number, but it is a large percentage to find in such a small number. To show you our death rate—of course for the year 1933 it is incomplete—but so far the deaths to August 1, 1933, were 100 deaths this year, only in our own state here, and to August 11, 1933 they were 105. Applications waiting at our sanitarium and unable to be taken in now amount to 63. Everyone of those 63 is a potential focus of infection as long as he stays outside of the sanitarium. They are a menace to the family or place where they may be living.

As I said, this summer we had several meetings on this very important subject, and the committee appointed by the Anti-Tuberculosis Society evolved the following plan to meet this condition, a plan which we hope and trust, with your approval, covers the situation pretty thoroughly. It is a most important work, and we have been most careful to keep this whole affair in the hands of the family physician, about whom we insist it must revolve in the future. We will be glad to hear any expressions of opinion or criticisms of the plan from any or all of you. The plan is as follows:

Resolution of the Medical Advisory Committee of the *Delaware Anti-Tuberculosis Society* to the *Delaware State Medical Society*:

That pulmonary tuberculosis is still one of the leading causes of death, is well known among all physicians, and many well-informed laymen. With this fact in mind, the Medical Advisory Committee of the Delaware Anti-Tuberculosis Society wishes to present the following plan to the Delaware State Medical Society for their cooperation and approval.

PURPOSE OF THE PLAN

(1) The primary motive behind this plan is to prevent the child, with childhood type of pulmonary tuberculosis, from developing into the open adult type, which, in turn, will infect other children and thus cause a viscious circle; to discover new cases of tuberculosis as well as early infection, and to bring them under proper supervision and treatment.

(2) To accomplish this form of preventive health work we have three means of approach, namely:

(a) History and physical examination
(b) Tuberculin skin test
(c) Roentgen ray examination of the chest

The combination of these three methods is most essential to the effective reduction of morbidity from pulmonary tuberculosis.

(3) The Committee agrees that for this work to be successful it must revolve around the family physician, with the Delaware Anti-

Tuberculosis Society and Brandywine Sanitorium, cooperating in every possible way.

Execution of the Plan

(1) Parents or guardians wishing to have their children tuberculin tested may apply to their respective family physician.

(2) The family physician may do the testing himself and charge an appropriate fee.

(3) In case the family physician wishes to do the testing himself, a card will be furnished him by the Delaware Anti-Tuberculosis Society on which to report his findings, either to the Delaware Anti-Tuberculosis Society or physician-in-chief at the Brandywine Sanatorium. *This report must be made.*

(4) In case the family physician does not wish to make the test, a consent slip will be furnished him by the Delaware Anti-Tuberculosis Society, upon which he may *request* that the test be done.

(5) This *request slip* will be sent to the Delaware Anti-Tuberculosis Society, who will in turn transmit it to the Laboratory, physician, or physicians who will be designated by the Medical Advisory Committee of the Delaware Anti-Tuberculosis Society who shall do the test and report results back to the family physician, the same as any other laboratory test is referred and reported on. Unless indigency is suggested on the request slip by the family physician the usual fee shall be charged.

(6) In case the patient has no family physician, a physician in the community, or elsewhere must be selected by the child's parents or guardian, and the request for the tuberculin test come through him.

(7) The positive reactors should be referred to a competent roentgenologist of the family physician's choice, for roentgenograms of the chest.

(8) The roentgenologist shall send a written report of his findings to the family physician.

(9) The charge of the roentgenologist shall be the usual fee, giving due regard to those who are only able to pay a reduced fee.

(10) All indigent cases to be roentogenographed at the Brandywine Sanatorium, upon the written certification of such indigency by the family physician.

(11) A notice of the days, time and place at which children may be tuberculin tested, to be decided by the Delaware Anti-Tuberculosis Society and Brandywine Sanatorium, be sent to every physician in the State. Such a notice should be in the form of a card which the physician may hang in his office for further reference.

(12) Tuberculin testing of children may be offered the schools of the State on behalf of the State Medical Society, Brandywine Sanatorium and the Delaware Anti-Tuberculosis Society, inviting their participation and cooperation.

Final Disposition of Cases

(1) After the child has been found to be a positive reactor and a confirmatory roentgenogram taken, the patient is then referred back to the family physician for his guidance.

(2) In case the family physician feels that home conditions are not conducive to proper treatment, he may arrange any sanatorium or other treatment which he may deem wise.

(3) Record cards in all cases, showing results of the tuberculin test shall be filed with the Brandywine Sanatorium for reference and future study.

(4) Roentgenograms taken by any and all roentgenologists shall be sent to the Brandywine Sanatorium for classification and filing for comparison with further progress roentgenograms.

Discussion

Dr. L. B. Flinn: (Wilmington) I would like to ask one question which I did not hear discussed in Dr. Wales' paper. Perhaps it was included in the details of the report. That is as to just what particular test should be used in the tuberculin test—what dosage, of what nature? Or is that left to the discretion of the family physician. I raise that point for several reasons. One is because I think decision as to that point will be important, and will be one means certainly of helping to decide which of the various tests will ultimately be proven to be the most satisfactory.

Dr. G. J. Boines: (Wilmington) What would be the method of handling the family where it is known that active tuberculosis exists, say a father with several children, and the family absolutely refuses treatment?

Dr. Ira Burns: (Wilmington): I want to

congratulate Dr. Wales and his committee on the general scheme, which follows out the plan that was suggested, largely at least, in our Economics Committee during the past winter, and that is the primary object, as he has stated, of keeping the patient in the hands of the family physician, which in this particular scheme seems to me to have been done most admirably.

Dr. W. T. Jones: (Laurel) I am interested in this discussion. I have a family the mother of which is in bed with tuberculosis, and her mother died of tuberculosis. She lost a husband with tuberculosis, and she now has tuberculosis and a flock of six or eight children around her, and I have no way of disposing of the case, and freeing the children from contamination. There is an error in our process of management somewhere, it seems. Did I hear a while ago that there are 63 waiting for admission to the sanitarium in Delaware?

As my neighbor said a while ago speaking of the test, I would like to know something about the test and what to use, and who furnishes the test. I would like to test the children out in this particular family. And what disposition is to be made of the mother in this particular instance?

Dr. Wales: Answering Dr. Flinn's question, naturally I think the Mantoux is the best one. We haven't gotten down to the details of this yet. We want to get the approval of the Society to the carrying out of this idea first. It is a very simple thing and not a hard thing to do. Of course, there is a certain technique to the skin test. We want to follow it up. The Mantoux test will almost surely show if there is some trouble brewing. It doesn't mean that it is active. It may be inactive, but it is important enough to follow up with x-ray findings of some sort. We want to check up on these cases anyhow. We will get down to the actual method employed at some future meeting. This is entirely schematic, but we think it is as near perfection as it can be made, and particularly where we make it revolve around the family physician. Where he doesn't feel that he wants to do it, the Society, I think, is perfectly willing to furnish the material, isn't it, Mr. Hinton? That is at the expense of the Society or State Board of Health. They really ought to do it, I should think. Mr. Hinton is secretary of the Anti-Tuberculosis Society.

Mr. D. E. Hinton: (Wilmington) I have been interested in listening to the splendid paper. All of those details remain to be worked out, as I see it, Dr. Wales. The Delaware Anti-Tuberculosis Society will be responsible for distributing tuberculin so far as we have the money to do it with, but entirely on approval of the State Medical Society. It would seem to me, in order to safeguard the physician's interest, and to be sure that no one goes off on a tangent on this thing, that the proper procedure would be for this group to appoint a committee of one or two officially to sit with the Medical Advisory Committee of our Society in working all of these details out.

Dr. Wales: I think that is a good suggestion, although all the men of that Medical Advisory Committee, of course, are members of the County and State Medical Societies also. I think the details about the furnishing of the tuberculin, etc., will be easy of solution. I think I have answered Dr. Flinn's question.

As for the technique, of course, if a man wants to do it himself he has to familiarize himself with it.

Mr. Hinton: While I am here and on my feet, if you will bear with me a moment, I would like to, in behalf of the Delaware Anti-Tuberculosis Society, thank the members of this State Medical Society and each of the three county societies, and many of the physicians with whom I have had very close touch in trying to promote our anti-tuberculosis work in the state, for their most sympathetic understanding and most cooperative assistance wherever we have found a job to do, and for the type of support they have always given us.

Dr. C. C. Neese: (Wilmington) I personally wish to thank Dr. Wales and the committee for their active interest undoubtedly in trying to protect the interests of the general physicians of the State Society. I think if all of our committees would be as active in safeguarding our interests and in elaborating on our interests in these things, we would not need a Medical Economics Committee to pull us out. I personally wish to thank Dr. Wales and his committee, and assure them that we are with them and that we do appreciate them.

DELAWARE ACADEMY OF MEDICINE

Library Notes

A large part of the literature in a library devoted to medicine and dentistry is comprised of periodicals. Many pages could be written about the history of the periodicals now in existence and about the hundreds of earlier publications that lived only a short while; much of medical history could thus be reconstructed from their files. Some of the titles are interesting: "The Medical Examiner", "Philadelphia Medical and Physical Journal", and "Medical Museum", all published in Philadelphia before 1800 and all short lived, "Medical Repository" published in New York from 1797 to 1824, and an early journal founded in 1679 and published in Paris which bore the sub-title "The New Discoveries in All Branches of Medicine". The first dental periodical is of somewhat later date, the first issues of the "American Journal of Dental Science" appearing in 1839.

The medical titles mentioned above seem all-inclusive; a great many changes have since come about and today many journals are devoted to one specialty, and often to one specific phase of a specialty, as under the subject of surgery we have the "Journal of Bone and Joint Surgery". Today a doctor has in mind his own needs and wants journals that have something to say and say it without needless repetition of old facts except so far as is necessary to show their relations to new ones. He wants journals that are free from traces of commercialism and that stand for the highest ideals and interests of the profession. He wants to keep in touch with matters not only of local interest but also with the progress throughout the world. The purpose of the library is to provide an opportunity to keep abreast of current advances and each member of the profession appreciates the fact that these advances appear in periodical literature sometimes several years before they are incorporated in text-books, and he wishes to consult regularly one or more periodicals in the field in which he is especially interested.

The usefulness of a library depends not only on the funds expended for the purchase of books and periodicals but also on the wisdom of selection, and the Library Committee has spent many months on the selection of the periodicals. In making this selection an attempt has been made to include the important journals in the United States, and representative ones published in other countries. Included in the list are several that are being contributed as gifts to the library, for which the Committee is very grateful. As the periodicals accumulate they well be bound and become a valuable part of our reference collection. For indexes and bibliographical references the library is equipped with the recent volumes of the Quarterly Cumulative Index Medicus, the Index Catalogue of the Library of the Surgeon General's Office, and Black's Index of Periodical Dental Literature.

Holmes once said "The latest medical intelligence should be spread out daily, as the shipping news is posted on the bulletin of the exchange" and we hope that the periodicals will be consulted frequently, and as the interest grows others will be added from year to year, and thus the library will continue its growth until it meets the need of the profession in a fair degree.

The periodicals now on hand are:

General Medicine

American Journal of Medical Sciences, Archives of Internal Medicine, Bulletin of the Johns Hopkins Hospital, Canadian Medical Journal, International Clinics, International Medical Digest, Journal of the American Medical Association, Journal of Laboratory and Clinical Medicine, Lancet, Medical Clinics of North America, Muenchener Medizinische Wochenschrift, Wiener Klinische Wochenschrift, Journals of the various State Medical Associations.

Basic Sciences and Medical Research

Journal of Experimental Medicine, Journal of Pharmacology and Experimental Therapeutics.

Surgery

American Journal of Surgery, Annals of Surgery, Archives of Surgery, British Journal of Surgery, International Abstract of Surgery, International Surgical Digest, Journal of Thoracic Surgery, Surgery, Gynecology and Obstetrics, Surgical Clinics of North America.

Cancer

American Journal of Cancer.

Pathology

Archives of Pathology.

Radiology

Radiology.

Orthopedics

Journal of Bone and Joint Surgery.

PEDIATRICS

American Journal of Diseases of Children.

OTOLOGY, RHINOLOGY, LARYNGOLOGY, OPHTHALMOLOGY

Annals of Otology, Rhinology, and Laryngology, Archives of Ophthalmology, Archives of Otolaryngology, British Journal of Ophthamology.

OBSTETRICS AND GYNECOLOGY

American Journal of Obstetrics and Gynecology, Surgery, Gynecology and Obstetrics (also listed under Surgery).

NERVOUS AND MENTAL DISEASES

Archives of Neurology and Psychiatry, American Journal of Psychiatry.

DERMATOLOGY AND SYPHILOLOGY

American Journal of Syphilis, Archives of Dermatology and Syhiliology.

DENTISTRY

British Dental Journal, Dental Cosmos, Dental Items of Interest, Dental Record, International Journal of Orthodontia, Journal of the American Dental Association, Journal of Dental Research, L'Odontologie, La Revue de Stomatologie, Vierteljahrschrift fur Zahnheilkunde, Zeitschrift fur Stomatologie, Medical Research Correlating Bureau.

The annual meeting of the Academy was held on January 12, 1934. The following officers and committees, effective April 1st, were elected:

HONORARY MEMBERS

Mrs. Henry B. Thompson, Mrs. Ernest du Pont, Mrs. Frank G. Tallman, Mrs. Julian Ortiz, Mrs. H. Rodney Sharp.

BOARD OF DIRECTORS

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Lewis B. Flinn, M. D., John H. Mullin, M. D., M. A. Tarumianz, M. D., J. D. Niles, M. D., Olin S. Allen, M. D., W. H. Kraemer, M. D., Representative, Medical Society of Delaware, W. O. LaMotte, M. D.; Representative, Delaware State Dental Association, P. J. Traynor, D. D. S.; Representative, Homeopathic Medical Society of Delaware, V. C. Washburn, M. D.; Joseph M. Barsky, M. D., J. Draper Brown, D. D. S.

The library is now open from 10 A. M. to 5 P. M. daily, except Saturday afternoon, and also on Tuesday and Friday evenings from 7:30 to 10 P. M. The Academy hopes in the near future to be ready to let the books be borrowed for a short time. This privilege, at least for the present, will be available only to the members of the Academy.

TUBERCULOSIS CLINICS IN DELAWARE

WILMINGTON

706 French Street—Each Friday at 4 P. M. (colored) Tel. 2-5151.

830 Kirkwood Street—Each Monday at 4 P. M. Last Monday evening of each month at 6:30 P. M. Tel. 2-0055.

5th & Madison Streets—Every Friday at 4 P. M. Each second Friday evening of the month at 6:30 P. M. Tel. 2-1063.

NEW CASTLE COUNTY

Newark—First Monday of each month at 10 A. M.

Claymont—Fourth Tuesday of each month at 2 P. M.

New Castle—Fourth Tuesday of each month at 10 A. M.

Middletown—First Wednesday of each month at 2 P. M.

KENT COUNTY

Dover—First Wednesday of each month at 10 A. M.

Milford—Third Wednesday of each month at 2 P. M.

Sussex

Georgetown—Second Wednesday of each month at 2 P. M.

Laurel—Fourth Wednesday of each month at 2 P. M.

In the City of Wilmington, information respecting the times of clinics at which Mantoux skin tests may be made can be obtained from the nurse in charge.

It would be appreciated if physicians would refer their cases to the Center nearest the patient's home.

Re: Birth Control

Physicians and medical societies throughout the United States, no matter which side they take on such a highly controversial subject, are watching with interest proposed legislation before the Seventy-third Congress calling for amendment of the present federal birth control laws. These amendments, commonly known as the "Doctors Only" bills, are Senate Bill 1842, sponsored by Senator D. O. Hastings, of Delaware, and House Bill No. 5978, introduced by Representative Walter Pierce, of Oregon.

This proposed legislation would amend the existing federal restrictions so as to legalize the sending or receiving of contra-ceptive information, instruments, and medicines between physicians and their patients, medical colleges and hospitals, and from physician supply houses and manufacturers.

Under the present statutes, penalties of heavy fines and imprisonment may be inflicted for transporting any article intended for the prevention of conception or for receiving for distribution to others any such article that has been transported interstate or by the Government mails. For several years there has been a controversy as to the propriety of the present Federal legislation, as there are many who contend that the Constitution does not grant the power to law to abridge the right of the physician to protect the life and health of his friends and patients.

The sponsors of the "Doctors Only" bills merely seek to place the responsibility for prescribing contra-ceptive action where it rightfully belongs—in the hands of the medical fraternity.

Leading doctors also contend that this change in the statutes will greatly aid in the proper care of cardiac, tubercular, and diabetic patients where pregnancy is contra-indicated and where conception would necessitate a therapeutic currettment.

The far-reaching importance of these bills is daily becoming more apparent to American physicians. The passage of these laws will depend largely upon the expressions received from the physicians, and there is yet time to express such views to their Congressman or the Senator and Representative mentioned above who are sponsoring these bills to amend the present laws for the interest and protection of the medical profession.

Southeastern Surgical Congress

The Southeastern Surgical Congress will hold its fifth annual assembly in Nashville, Tennessee, March 5, 6 and 7. The Andrew Jackson Hotel will be Hotel headquarters, and the lectures and exhibits will be in the War Memorial Building.

The following doctors will occupy places on the program: Fred H. Albee, New York; W. Wayne Babcock, Philadelphia; S. O. Black, Spartanburg; Vilray P. Blair, St. Louis; Frank K. Boland, Atlanta; J. B. Brown, St. Louis; D. B. Cobb, Goldsboro, N. C.; George W. Crile, Cleveland; T. C. Davison, Atlanta; John F. Erdmann, New York; P. G. Flothow, Seattle; Seale Harris, Birmingham; M. S. Henderson, Rochester, Minn.; Arthur E. Hertzler, Halstead, Kansas; Chevalier Jackson, Philadelphia; Walter C. Jones, Miami; Dean Lewis, Baltimore; Joseph F. McCarthy, New York; C. Jeff Miller, New Orleans; A. J. Mooney, Statesboro, Ga.; John J. Moorhead, New York; Edward T. Newell, Chattanooga; Fred Rankin, Lexington, Ky.; Paul H. Ringer, Asheville; Stewart Roberts, Atlanta; George H. Semken, New York; Phil C. Schreier, Memphis; Arthur M. Shipley, Baltimore; H. E. Simon, Birmingham; A. O. Singleton, Galveston; J. R. Young, Anderson, S. C.; Waitman F. Zinn, Baltimore.

For information write Dr. B. T. Beasley, 1019 Doctors Building, Atlanta.

Cancer Comment

TUMORS OF THE TESTIS

Marion L. H. Freeman,*
Wilmington, Del.

Neoplastic disease of the testis is a comparatively uncommon condition, the incidence being one in two thousand male admissions, but a large number of discussions are found in the literature, beginning with the work of St. Donat in 1696. He described a testicular tumor in detail, laying emphasis on the presence of a rudimentary skull.

These tumors are derived from a cell which, in its final product, spermatozoa, has the potentiality of forming any and all types of tissue. They may resemble any adult tissue or may remain very embryonal. They most frequently resemble carcinoma or contain small tightly packed undifferentiated cells.

The tumors may be divided into four groups:

1. Embryonal carcinoma and embryonal teratoma
2. Teratoid or mixed tumors
3. Chorio-epithelioma
4. Miscellaneous, including dermoid, fibbroma, chondroma, myxoma, adenoma, lymphoblastoma, and spermatocytoma.

Of the predisposing cause little has been said definitely excepting that Ewing's "Neoplastic Diseases", third edition, page 850, considers the undescended testicle to be an important factor. MacKenzie (Surg., Gyn. & Obstet., 52, 2,336 [Feb. 1931]) on the other hand remarks that neoplastic disease of undescended testis is a very rare occurence. Trauma has been considered an important etiological factor by many authors.

The majority of cases reported are between the ages of 20 and 50 years, at which time sexual activity is greatest.

Metastasis takes place early in the course of the disease by way of the blood vessels and lymphatics. The teratomas or mixed tumors metastasize earlier than seminomata but all types show early general metastases, particularly to the lungs and liver.

The symptoms presented are usually swelling of the testis, but occasionally the enlargement of the inguinal nodes is the first indication of the condition. A small number of patients seek medical aid for shortness of breath, cough, or swelling of one or both legs. There is a report of one case which showed typical attacks of Jacksonian epilepsy which was proved at autopsy to be due to brain metastasis. This same patient had painful breasts in which colostrum was present. The tumor was a chorio-epithelioma.

The diagnosis is usually made by the process of exclusion, tuberculosis, gumma, hydrocele and hematocele having been considered. The treatment consists of either simple or radical castration or irradiation, with or without surgery. The choice depends on the presence and extent of metastases.

In reviewing a group of 285 cases, Frank Hinman (Surg. Gyn. & Obstet.: 56:2A, 450 [Feb. 15, 1933]) found that 118 are dead, 124 are living, but only 17 living for 5 years or longer, a cure of only about 6%.

Prolan A (the follicle-ripening hormone of the anterior lobe of the pituitary body) is excreted in large amounts in the urine of patients with tumors of the first three groups, but is absent in the presence of tumors of the miscellaneous group. Diagnosis and an indication of the success of treatment can be determined by a quantitative modification of the Ascheim-Zondek test.

Russell S. Ferguson, (J. A. M. A. 101, 25, 1933) presents a series of 117 consecutive cases of teratoma testis in which the quantitative excretion of Prolan A has been determined over a period of time by the quantitative modification of the Ascheim-Zondek test. In all the cases in this series in which the tumor had been unaffected by treatment. Prolan A was found in the urine in varying amounts. The factors which determine the urinary excretion of this hormone are: (1) the embryonal character of the tumor, (2) the extent of the disease, and (3) the effect of treatment.

The Delaware Tumor Clinics have on record four proved cases representing the first two types, and a spermatocytoma. All were treated by simple orchidectomy: three died within a year. The case of spermocytoma is being treated with high voltage x-ray in expectation that a cure will be effected.

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*Secretary-technician of the Delaware Tumor Clinics.

EDITORIAL

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Articles sent this Journal for publication and all those read at the annual meetings of the State Society are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Manuscript should be sent in typewritten, double spaced, wide margin, one side only. Manuscript will not be returned unless return postage is forwarded.

The right is reserved to reject material submitted for either editorial or advertising columns. The Publication Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Reprints of original articles will be supplied at actual cost, provided request for them is attached to manuscripts or made in sufficient time before publication.

All correspondence regarding editorial matters, articles, book reviews, etc., should be addressed to the Editor. All correspondence regarding advertisements, rates, etc., should be addressed to the Business Manager.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

It is suggested that wherever possible members of the State Society should patronize our advertisers in preference to others as a matter of fair reciprocity.

Subscription price: $2.00 per annum in advance. Single copies, 20 cents. Foreign countries: $2.50 per annum.

Vol. VI February, 1934 No. 2

DELAWARE ACADEMY OF MEDICINE

The Delaware Academy of Medicine was organized some four years ago to provide for the medical profession of this state two facilities then lacking—a meeting place of their own, and a medical library. The former is an accomplished fact, of over a year's duration, and serves its purpose admirably. The building is the historic colonial Bank of Delaware, erected on Market street in 1806, and rebuilt on the triangular plot of ground at the Park Drive, Union street, and Lovering avenue. It is used monthly by the New Castle County Medical Society, the Dental Society, and other similar bodies. Whenever the sessions of the Medical Society of Delaware meet in Wilmington, they will be housed here.

The second facility—a medical library—is in the making. Already, through gifts and purchases, some two thousand volumes are on hand, and fifty national and foreign journals are being received regularly, together with the state journals of this country, some thirty-five in number. Thus, even in this short space of time the leading reference texts and current literature is available to the profession, and additions of a substantial volume are anticipated in the not distant future. As a member of the American Library Association loan volumes can be obtained on certain conditions.

At the recent annual meeting of the Academy a very healthy financial condition was reported, due to the generosity of certain of our lay friends. We hope we may merit a continuance of their support. Elsewhere in this issue of The Journal we publish some notes, including the list of journals received, and the officers for 1934-1935.

The Academy also sponsors certain scientific meetings, and while the building has been occupied only slightly more than a year, two excellent seminars have been held, one on diabetes and one on tuberculosis. In addition, while the Academy has nothing at all to do with the programs of the clinico-pathological conferences recently inaugurated by Dr. Raymond B. Moore, it has tendered the use of its auditorium for these very stimulating meetings. Other scientific functions will be inaugurated later. The Academy does not compete with the state and county medical societies, but supplements them with facilities and services they would otherwise not be able to afford.

The profession should appreciate the coming of the Academy. It can show this by utilizing its facilities to the utmost, especially the library, which is open daily. Let us have a serious-minded, studious body of practitioners; let us use this library systematically, for a medical education is never ended.

EDITORIAL NOTES

DEAR DOCTOR:

THE JOURNAL and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service.

It is absolutely *free* to you.

The Cooperative Bureau is equipped with catalogues and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in THE JOURNAL, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages, but if they are not, we urge you to ask THE JOURNAL about them, or write direct to the Cooperative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want THE JOURNAL to serve *you*.

The President's Page, as a regular monthly feature, has been discontinued. In a state as small as ours, especially in a non-legislative year, there is not sufficient material for a worthwhile message from the President each month. The President wishes to avoid the writing of merely perfunctory notices. He will, however, address the profession from time to time, as the occasion arises. Seven other states publish a President's Page, but they all have large societies, with activities on a scale far and beyond those of Delaware.

Our page of Cancer Comment, inaugurated last month, has elicited considerable praise. This page is to be a definitely educational one for the profession; not all the educating in the cancer field should be aimed at the laity. The doctors of Delaware will do themselves a service if they read this page regularly and carefully.

THE DELAWARE STATE MEDICAL JOURNAL congratulates Dr. Lewis Stephen Pilcher on his golden jubilee as a medical editor. The ANNALS OF SURGERY, the first surgical journal in the English language, was founded by Dr. Pilcher in 1885, and from that day to this his has been the guiding hand editorially. Our greetings to both—a great scientific journal, and a pioneer medical editor.

WOMAN'S AUXILIARY ASSOCIATION

MRS. JAMES BLAKE, *President*, Hopkins, Minnesota

MRS. ROBERT W. TOMLINSON, *President-Elect*, Wilmington, Delaware

"Here's to the year that's AWA,
Here's to the friends we can trust
When the storms of adversity blaw,
May they live in our song, and be nearest our hearts,
Nor depart like the year that's AWA."

Greetings to all for 1934. Our Christmas vacation is over, fresh duties, reinvigorated hopes call us to attack the baffling problems of a bewildered world, with all our conquering energy. After all, there is nothing like a day's work. There is no joy like that of overcoming difficulties. Thank the Lord for vacations, but thank Him no less that they do not last forever.

The spirit of co-operation, of mutual responsibility, which has been awakened in the modern world by the necessities of the hour, is a sure corner stone of abiding prosperity. We trust the New Year will be one of surer rewards for honest toil of hand or brain, of larger opportunity for individual ability and of more just and equitable distribution of the fruits of our labor.

The year 1934 will bring us to Cleveland, Ohio—June 11 to 14—for our Annual Meeting. Plans are already in the forming to make this one of the best conventions we have ever held. The Carter Hotel has been selected as our Headquarters. We find it is located just two short blocks from the Statler, the hotel headquarters for the men of the American Medical Association. We are looking to each and every State group to get their membership and their dues up to date by the end of the fiscal year, and keep their roster in good shape and still open for new members. Paid up memberships will play a great part in our Cleveland Meeting. Every state through its delegate body, will be called upon to decide many mutual questions, that also are national in their final decision.

This NEWS LETTER has a very timely letter from Mrs. Percy, our treasurer. I know you are all delighted to hear from her—and do make her happy by getting your dues in shape. Our Membership is one of the most interesting parts of our day's work. We must all realize that right now every State President and State Organization Chairman, with their Treasurer, must use the discretion and tact of an archangel in handling their membership file. Of course, Nationally only paid up members can be listed, for every State, in order to help us keep our file for our "House of Delegates", in proper shape. But I am sure every County Auxiliary President sometime between now and the end of the fiscal year will have grey hairs added to her head over, "What will we do with Mrs. So and So?" Please use a Common Sense way out of your difficulties—and remember this cannot last, and a "Friend in need, is a Friend indeed."

Now for another thought—how about your State Program Work? Any interesting points, any marked successes, even your failures, will interest Mrs. McGlothlan and Mrs. Long, and your humble President also.

HYGEIA has been so filled with worthwhile reading matter the past months, I am sure we should be able to interest many of our friends in its pages. The December pages on amebic dysentery are well worth a year's subscription to a lay person with an inquisitive mind. Boys and girls of high school age are fairly crazy over "Let's Make Winter Sports Safer", "Unpleasant Breath", and the series on "Training for Athletics and Health." And I myself was intensely interested in "Waist-Lines and Life-Lines". And what doctor's wife has not been asked by her bosom friend "What can I do with the children and 'Sex Education'?" Simply hand her one volume of HYGEIA—and tell her to invest in HYGEIA for the rest of the series on this topic. And now with January 30th and the President's Birthday Balls—and his personal story—a timely article on "After Care of Infantile Paralysis", caught my eye some days ago, and when the radio announcer just a few minutes ago, made his story of the Birthday Balls rather interesting, my own fourteen year old son came to me and asked "Mother, do you know where that copy of HYGEIA is, that has the story and good pictures on infantile paralysis?" Well, before three more boys that have just arrived and my son go skiing, all will have read the article and I have been asked, "May we read your HYGEIA for the past months if we are quiet?" "Well, yes boys, but I wish you could all have a full year's selection of this health magazine on your own shelves." I hope the seed will take root and grow. The youth of today needs HYGEIA more than ever before, and HYGEIA, I am pleased to say, is filling a much larger niche in every day lay peoples' lives than ever before. The publishers are to be congratulated on their choice of articles.

I know Mrs. Miner will be paying each state a visit on paper some day soon. Her versatile brain is working on Cleveland plans. So watch for her message.

Mrs. Hunsberger still holds forth at the "old stand". Mrs. Odenatt is quietly marking time, watching Mrs. Willard Bartlett gather up the loose ends of her History Book.

Mrs. Adair is a good "Watch Dog" over our bills. Mrs. Doane knows her business. Mrs. McCaw has visions of Revisions. Mrs. Catlin has the new Treasurer's receipt books, and a slightly revised "Hand Book" from the printing presses of two states to her credit, and Mrs. Burns is getting her ear tuned in for the Cleveland Meeting to keep us all on the dotted line of ROBERT'S RULES OF ORDER. Mrs. Tomlinson is planning to pick up where I leave off and we are corresponding weekly so there may be no break in our understanding of mutual problems; the rest of our official family is marking time, and doing its bit for particular sections of the country. We find their names in print often, so know they are up and coming.

Now I have trespassed on your time and good nature long enough to call the roll, down to Mrs. Whitacre our Membership and Organization Chairman. She has some ideas of her own she is working out along with her NRA problems. She will have a fine statistical report for the Cleveland Meeting based on her own idea of Membership Reports. Mrs. Packard, Mrs. Oates, and Mrs. Van Ness are all busy helping her.

Mrs. James Blake.

MISCELLANEOUS

NBC Commercial Report

The National Broadcasting Company, through its Sales Promotion Department, reports a total of 76,641 hours and 17 minutes of commercial station hours over its 87 network stations for the year 1933. This is at the rate of 2 hours, 39 minutes commercial network time *per outlet per day*—considerably more than twice the average of any competing network.

For the month of December, 1933, the NBC average of commercially sponsored time was up to 3 hours and 24 minutes per outlet per day compared with 3 hours and 3 minutes for the same month in 1932. For the first time, this method of computing time sales takes into account the varying number of stations used by advertisers and, therefore, gives a closer picture of average time sales on network stations from coast to coast than any heretofore publicized. This method answers the most logical question advertisers ask when they are about to spend their advertising dollars for radio network time. That is: "How many hours of commercial network programs are already carried on the stations I am buying with my broadcast advertising dollar?"

The National Broadcasting Company is, therefore, attempting to clarify certain prevalent methods of comparing the several network broadcasting outlets available to them. This new method of registering or checking network time use, termed the "station-hour" record, gives a more reliable yardstick of the actual time sales situation (averaged over all the stations of a network) than dollar volume, percentage increases or any of the usual methods, and has been released for the first time by the Sales Promotion Department of the National Broadcasting Company. Also, heretofore, all network records—other than income reports—have disregarded the number of stations used and the term "network" has been interpreted as any hookup of two stations or more.

It is NBC's claim that this "station-hour" comparison gives a much more accurate picture than so-called comparisons of "network hours", which may place a small network of two or three stations on an equivalent basis to a 50-station, coast-to-coast hookup, or more, depending upon the advertiser.

NBC points out that commercial programs on the NBC networks begin earlier and end later than on any other network. For instance, the NBC Red Network begins its broadcasting day at 6:45 A. M., daily except Sunday, at which time it puts the "Tower Health Exercises" on the air, while at 10:30 to 11:30 P. M., Saturday nights, the NBC Blue Network carries the "National Barn Dance" sponsored by Dr. Miles Laboratories. This program is on the air later than any competing network commercial broadcasts.

In the case of the Metropolitan Life Insurance Company's program—"Tower Health Exercises"—this program has been on the air in the early mornings nine years over NBC stations.

Truth About Medicines

The following apparatus has been accepted by the Council on Physical Therapy for inclusion in its list of accepted devices for physical therapy:

Oxygenaire.—The Oxygenaire is recommended by the firm as satisfactory for use whenever oxygen therapy is indicated. Unlike other oxygen tents examined by the Council, this unit is not provided with a motor-fan assembly or an injector for circulation of the oxygen-rich atmosphere. It depends on its energy for circulation by convection currents generated by melting ice in the chamber on one side and the heat of the patient in the tent proper on the other, between which there is free communication of air mixture. Smoke tests indicate a satisfactory circulation of air within the tent, depending on the amount of ice in the chamber. Temperature and humidity were very well controlled in test cases of patients having pneumonia, heart failure, edema of the lung due to drowning, and also in tests on normal subjects. Like all oxygen therapy apparatus, accurate check on the concentration of oxygen and carbon dioxide must be made regularly to insure the proper control. American Hospital Supply Corporation, Chicago. (Jour. A.M.A., September 9, 1933, p. 853).

The Federal Trade Commission.—The Federal Trade Commission has powers in the medical field that are not possessed by the Food and Drug Administration that enforces the Food and Drugs Act. It may investigate and take action in cases that involve or appear to involve unfair trade practices. Where such practices are proved, the Commission may either require the concern involved to sign a stipulation to the effect that the objectionable methods will be given up, or may issue what is known as a "Cease and Desist Order" in which the individual or company involved is ordered to cease and desist from practices that have been declared objectionable. Recently (July 17, 1933) the Commission published some facts in a series of stipulation proceedings involving misleading advertising practices. Among these were the following medical or quasi-medical products: Gall bladder cure (E. E. Paddock, Kansas City, Mo.); Sargon and Sargon Pills (G. F. Willis, Inc., Atlanta, Ga.); Natural Body Brace (The Natural Body Brace Co., Salina, Kansas): Formula Q (Harris H. Luntz, Brooklyn, N. Y.): Gaduettes (Gaduette Company, Battle Creek, Mich.); Drysorb (Drysorb Company, St. Louis, Mo.); Health Appliance and Corinthian Astringent Lotion (Health Appliance Company, Cleveland, Ohio); Conley Ointment (Conley Ointment Corporation, Muncie, Ind.); Viscose (Clason Viscose Company, Chicago): Relief Compound (The Southington Remedy Company, Kansas City, Mo.); Lecithin Tablets (Lecithin Company, Long Island City, N. Y.): Prosager (MidWest Products Company, Kalamazoo, Mich.): Ulticur (Ulticur Company, Inc., Chicago): Johnston's Golden S.O.S. Powder (Johnston Chemical Company, Fort Bragg, Calif.). Jour. A.M. A., September 30, 1933, p. 1095).

Etiology and Treatment of Anemia In Pregnancy

Maurice B. Strauss, Boston (Journal A. M. A., Jan. 27, 1934), points out that the "physiologic anemia" of pregnancy is only the effect of hydremia. The hypochromic anemia of pregnancy is due either to a direct dietary deficiency or to a deficiency conditioned by gastric anacidity, hypoacidity or associated defects in the presence of the fetal demand for blood-building materials. It may be completely relieved, either during or after pregnancy, by the administration of iron in suitable (usually large) doses. The macrocytic anemia of pregnancy is generally due to a temporary lack in the gastic juice of a specific intrinsic factor, which has been shown to be absent from the gastric juice of patients with addisonian pernicious anemia in relapse. The ultimate complete return of this factor after delivery is hypothecated. In other cases the lack of the extrinsic factor associated with vitamin B from the diet may produce similar effects. The macroytic anemia of pregnancy ordinarily may be completely relieved with liver extract, although iron is frequently required in addition. The similarity of the etiologic mechanism involved in the hypochromic anemia of pregnancy and idiopathic hypochromic anemia in the absence of pregnancy, and in the macroytic anemia of pregnancy and addisonian pernicious anemia, is pointed out. The development of anemia in pregnancy may best be prevented by supplying the pregnant woman with an adequate intake of blood-building materials.

Clinical Control of Chronic Hemorrhagic States In Childhood

In his article (Journal A. M. A., Jan. 20 and 27, 1934), I. Newton Kugelmass, New York, states that hemorrhagic states are unitary and unique. Their manifestations are as individual as the particular parent, as varied as the determining disease, and as widespread as are the offended organs and tissues. And yet they show few symptoms and fewer signs to be ever adequate for diagnostic differentiation without further scientific study. The author discusses the essential diagnostic procedures for hemorrhagic disturbances, a new classification of hemorrhagic states, dietary control of chronic hypothrombinemia, treatment of types of thrombocytopenic purpura, evaluating symptomatic thrombocytopenic purpura, vascular hemorrhagic diseases, and under hereditary hemorrhagic diseases he discusses hereditary hemophilia, familial thrombocytopenic purpura, hereditary thromboasthenic purpura, hereditary hemorrhagic telangiectasis and transitional hereditary hemorrhagic diseases.

OBITUARY

Luther S. Conwell, M. D.

Dr. Luther S. Conwell, aged 75 years, one of the best known physicians of the State, former member of the Legislature and for a number of years secretary and executive officer of the State Board of Health, was found dead in bed at his home in Camden, Del., on February 5, 1934. Dr. Conwell had not been in health for some days but his condition was not considered critical. Death is thought to have been due to a heart attack.

Dr. Conwell spent practically all his life in Kent county. He graduated from Jefferson Medical College, Philadelphia, in 1884, and came to Kent county to practice his profession.

He had been located in Camden for considerable more than a quarter century and his death leaves that town without a physician.

In politics Dr. Conwell was a Republican and represented the Camden district in the House of Representatives for one term six years ago. Previous to that he had been secretary and executive officer of the State Board of Health for some years.

His wife died some years ago and his only child, a daughter, also died a number of years ago. He is survived by two brothers, Prof. Charles S. Conwell, of near Camden, a former member of the faculty of Delaware College and a trustee of the University of Delaware and William Conwell, of Baltimore, and three sisters, Mrs. Ezekiel Cooper, of Wilmington and Mrs. Jacob G. Brown and Mrs. L. W. Hollis, both of Camden.

He was a member of the American Medical Association and the Medical Society of Delaware. The funeral was held on February 7, 1934, with interment in the Odd Fellows' Cemetery, at Camden, Del.

Joseph Bringhurst, M. D.

Dr. Joseph Bringhurst, 62, practising physician, member of the staff and the medical board of the Milford Emergency Hospital, died on February 6, 1934 at his home at Felton, following an illness of a few days. Accompanied by a son, he drove to the hospital four days previously to make his customary visit and while on the way home he suffered a stroke of paralysis which resulted in his death.

He is survived by his wife, Mrs. Elizabeth Mellor Bringhurst, and five children: Mrs. Esther Glidden, of Lancaster, Pa.; Mrs. Anna Cleaves, of Philadelphia; George M., of Viola; Joseph Bringhurst, of Felton, and Lewis, a medical student at the University of Pennsylvania.

Dr. Bringhurst was born at Booth's Corner, September 15, 1871, the son of John R. and Elizabeth Tatnall Bringhurst. He lived in Wilmington and Marshallton in his youth, and attended Friends School, Swarthmore College, and the Medical School of the University of Pennsylvania. He practiced in and around West Chester, later taking up dairy farming. In 1916 he moved to Harrington and at the outbreak of the World War, entered the military service and was stationed at Camp Dix and attained the rank of captain in the Medical Corps. After the war he returned to Harrington and later moved to Felton.

Dr. Bringhurst had been local surgeon to the P. R. R. Company. He was a member of the Kent County Medical Society, of which he served as secretary; the Medical Society of Delaware, American Medical Association, and the Pennsylvania Railroad Surgeons' Association. He was a Republican and a member of the Society of Friends.

The funeral was held on February 9, 1934, with interment in the Friends' Cemetery, West Chester, Pa.

BOOK REVIEW

Treatment of the Commoner Diseases Met with by the General Practitioner. By Lewellys F. Barker, M. D., Professor Emeritus of Medicine, Johns Hopkins University, Pp. 319. Cloth. Price, $3.00. Philadelphia: J. B. Lippincott Company, 1934.

Any book by this author means an authoritative work both from the experience of the author himself and his exceptional critical analysis of the most authoritative information relating to the subject under discussion. This particular book should certainly be of interest to any physician, not merely a general practitioner. Perhaps its greatest interest lies in the author's concise synopsis of the history of each particular disease or disease group, together with its present-day concept. This enables the reader to quickly refresh his memory upon any topic with which he has not recently been conversant. The bibliography in the form of footnotes offers him the opportunity of studying each particular subject in more detail from the most authoritative sources available.

However, the vast scope of such a work confined to one small volume has its drawbacks. The book does not give treatment for some of the more complicated diseases in sufficient detail to enable the general practitioner to intelligently treat a patient without seeking further instruction. The bibliographical footnotes, however, indicate where this instruction can be found.

Considering the book as a whole it should prove of interest and value to every general practitioner.

1789—MEDICAL SOCIETY OF DELAWARE—1934

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NEW CASTLE COUNTY MEDICAL SOCIETY—1934

Meets the Third Tuesday

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ROGER MURRAY, *Secretary*, Wilmington.
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KENT COUNTY MEDICAL SOCIETY—1934

Meets the First Wednesday

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E. RICHMOND STEELE, *Vice-President*, Dover.
JOSEPH BRINGHURST, *Secretary-Treasurer*, Felton.

Delegates: O. V. James, C. J. Prickett, I. J. MacCollum.

Censors: S. M. D. Marshall, W. J. Marshall, W. C. Deakyne.

DELAWARE ACADEMY OF MEDICINE—1934

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SUSSEX COUNTY MEDICAL SOCIETY—1934

Meets the Second Thursday

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DR. G. V. WOOD, *Vice-President*, Gumboro.

DR. E. L. STAMBAUGH *Secretary-Treasurer*, Lewes.

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Censors: W. F. Haines. G. V. Wood, W. T. Jones.

Program Committee: Bruce Barnes. James Beebe, K. J. Hocker.

Nomination Committee: R. C. Beebe, G. E. James, U. W. Hocker.

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CHOICE OF PHYSICIAN UNDER WORKMEN'S COMPENSATION LAWS*

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Bethlehem, Penna.

The first State compensation laws became effective in 1911 (Wisconsin, Nevada, New Jersey, California, and Washington), Delaware's law became effective in 1918. Naturally, the laws of the various States differ, but with this you must agree, that all were enacted for the benefit of the *injured worker*. In forming these laws, the employer, the employee, the lawyer, all gave up something; the doctor did not, he gained something, but for the continuance of the soundness of the whole scheme he must yield, not anything he has ever possessed, but advantages he seeks to gain.

Most of the State compensation laws have been amended, some many times. As a profession you will agree that we did not pay sufficient attention to the trend of the acts. Some of us in years gone by called attention to various changes needed, but the profession as a whole displayed no great interest.

The interpretation of compensation laws, and the laws themselves have undergone many changes since first written but the "care of the injured worker" still remains as the first thought.

No doubt some of the medical problems of compensation acts would be better cared for had we physicians lent our aid earlier. We cannot discuss all these problems, and your President has asked me to present the "Choice of Physician under Workmen's Compensation Laws," and I want to start with the assumption that we are dealing with honest employees, honest employers, honest doctors, and honest insurance carriers.

The laws, as written now, place the responsibility for the care of the injured worker on the employer. The employer must provide prompt and adequate medical and surgical care for the injured worker, assuring the medical profession fair compensation for the service rendered. In cases of injury a doctor must be called; the choice of this doctor rests now with the employer. Some of you would have it that the injured man be allowed to select the doctor of his choice. The question then is: shall the employer or the injured man select the physician? Sometimes the employer is represented by his insurance carrier. Then our problems center about the choosing of the doctor.

"There are three parties at interest when an employee sustains an injury, the employee himself (and his family), the employer, and the insurance carrier; the employee because he himself suffers the injury and because he himself suffers the loss of wages through inability to work; the employer because the accident interferes with the carrying on of his industry and because he does not wantingly injure men and again the costs are his; the insurance carrier because the carrier has assumed certain of the financial responsibilities of the employer."

I admit all three have an interest. The employee, of course, has a direct interest, but my contention is that he is not in a position to make a choice. He is not in a position to judge of the qualifications of doctors. If free choice by employees were the law, you would have a virtual racket contending for the work, with "runners" and other inducements rivalling the old claims work of days gone by.

Quoting from Mr. Browne "I see no benefit that would accrue from a change in the present system. I know that in some quarters there has been a movement urging a change in the law, based on the thought that the family physician would immediately be called to the injured man when injuries occur, and in that manner these cases, instead of being centralized, as they now largely are. into the hands of surgeons and practitioners making a specialty of this type of work, would be spread through the profession generally. I subscribe that such would not be the result. In the first place, there would immediately grow up groups, or organizations, with a scheme of benefits whereby all medical service would be performed by men selected by this group, the case handled in its entirety by the representatives of the group, and the high class of men now performing this serice through selection by the employer would be excluded from it. There then would be bidding for this business by the lodge insurance doctors because of the outside insurance benefits and contracts brought thereby, and the cases lifted from the physician originally selected by the employer. If you are skeptical of this, then I commend to your attention the thought that politics and other influences, of which you can conceive, would be brought to bear to send these cases to a clinic or so-called clinics, influenced by solicitors or the leading men of the nationalities to which the men belong, to have these cases centrallized in their hands. . . . Instead of coddling employers to secure this business, as now undoubtedly exists in a small way, the workman would be the object, and competition would be of the sharpest sort. Ambulance chasing in its palmiest days could not possibly be any worse than the situation that would be brought about by this change.''

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*Read before the Medical Society of Delaware, Wilmington, September 26, 1933.

Political influence on the placing of this work enters now. France can furnish a good example of this at the present time.

The question presents many problems because of the various kinds of industries, the locations, and the various number of employees, as well as the hazards of the industry.

Take a plant of 5,000 men, a foundry or shipyard, and say 25 men suffer some small injury during the day and each chooses to leave the plant and go from one-half to five miles to have treatment by the doctor of his choosing. The time lost from the job is likely to hold up five or six other men on the same job. In such a plant the men have a right to ask of the employer that he comply with the law and supply adequate medical attention.

The law demands reports of all accidents, accurate accounts and check ups must be made, the injured must be followed up in treatments, and all of this requires a detail which the doctor in general practice is loath to do.

Take the problem of the construction and erection companies, bridge builders, where men are sent from State to State on jobs. Are these men in a position to know the best doctor in the community? The work is at times miles away from the nearest doctor. Is it not better if the employer learns through his medical department who is the best doctor in that community to handle such work and arrange with him to care for the injured? Arrange to have him call at the job for dressings? Arrange to send needy cases to his office or hospital? Arrange for him to designate a substitute in case he cannot be reached? These are problems which must be considered humanely and economically from the standpoint of the employee and the employer.

The care of the injured has developed within our profession a specialty—industrial physician, with men who have seen fit to devote their time and ability to this work. It has enlarged a field of surgery, call it traumatic if you choose, that heretofore did not receive the attention it should. The care for and restoration of the injured is a specialty requiring skill of the highest degree.

All doctors are not equally competent to do workmen's compensation work. ''All doctors are not equally competent in general. There is a wide divergence in natural ability and in education and training. and if adequate medical attenion is to be had, account must be taken of this fact.'' Traumatic surgery is a specialty and the ordinary practitioner is in general not capable of rendering the highest grade of expert service in this field.

''There is a natural tendency to develop a specialized surgery in congested centers that is extremely valuable to the parties vitally interested in the compensation law, the employer and the injured man. The law which we know as the 'survival of the fittest' operates to gravitate this business to such men because it is to the employers' interest to select such men.''

''In the years during which the compensation law has been operating and during which this tendency towards specialization has slowly grown, many innocents may have suffered through unskilled service. But thanks to this development, the incompetent service is now confined to the exceptional which through ignorance or chicanery reaches the practitioner who should not have it." Are we now to cast this experience into the discard and throw away the stimulant that has built up and sustained the splendid service that is now possible for our injured men?"

The experience of one of our large insurance companies furnishes interesting figures showing the value of selected service by doctors of their choice against service by doctors selected otherwise.

Experience of the Maryland Casualty Company with Regard to Selected and Unselected Doctors

FRACTURES		AVERAGES				
	Cases	Medical	Temporary Compensation	Specific Compensation	Days Disability	
Skull	32	$191	$127	$246	162	Selected
Skull	33	295	273	1036	602	Unselected
Vertebrae	36	330	230	740	500	Selected
Vertebrae	26	363	560	1026	866	Unselected
Ribs	8	110	70	25	31	Selected
Ribs	11	193	146	45	75	Unselected
Scapula	1	80	148	0	88	Selected
Scapula	3	44	227	0	85	Unselected
Clavicle	6	119	349	296	236	Selected
Clavicle	11	71	58	58	81	Unselected
Humerus	22	342	343	356	307	Selected
Humerus	28	316	362	711	418	Unselected
Radius	92	65	117	124	83	Selected
Radius	81	82	122	160	146	Unselected
Ulna	17	110	53	157	87	Selected
Ulna	28	110	116	74	108	Unselected
Radius & Ulna	34	155	141	205	360	Selected
Radius & Ulna	35	142	195	369	249	Unselected
Pelvis	11	183	190	0	71	Selected
Pelvis	13	336	276	273	358	Unselected
Femur	14	657	457	308	412	Selected
Femur	22	495	391	892	668	Unselected
Patella	15	195	179	42	113	Selected
Patella	8	347	361	342	267	Unselected
Tibia	74	232	256	201	271	Selected
Tibia	54	186	339	345	290	Unselected
Fibula	42	134	189	240	136	Selected
Fibula	40	89	176	98	131	Unselected
Os calcis	19	130	243	407	303	Selected
Os calcis	14	163	679	724	543	Unselected
Tibia & Fibula	7	385	328	57	232	Selected
Tibia & Fibula	18	223	321	729	525	Unselected

OTHER INJURIES		AVERAGES				
	Cases	Medical	Temporary Compensation	Specific Compensation	Days Disability	
Lacerations	754	$25	$24	$12	16	Selected
Lacerations	338	30	24	21	20	Unselected
Contusions	692	33	30	25	18	Selected
Contusions	308	32	43	44	36	Unselected
Sprains &	489	28	36	19	26	Selected
Strains	166	58	122	48	60	Unselected
Eye Injuries	227	30	15	50	26	Selected
Eye Injuries	75	33	29	48	22	Unselected
Burns	123	33	30	33	29	Selected
Burns	51	45	55	28	34	Unselected
Traum. Amps.	44	74	50	378	200	Selected
Traum. Amps.	13	104	140	368	202	Unselected
Punctured Wds.	191	22	13	16	15	Selected
Punctured Wds.	74	49	32	84	42	Unselected
Foreign Bodies	77	22	16	5	11	Selected
Foreign Bodies	42	64	30	13	13	Unselected
Dislocations	23	38	55	131	124	Selected
Dislocations	15	118	199	20	97	Unselected
Hernias	116	135	141	0	59	Selected
Hernias	44	133	158	0	61	Unselected
Unclassified	86	90	97	40	107	Selected
Unclassified	67	32	65	151	29	Unselected

I mentioned the choice by employee, and by the employer. The third interested party is the insurance carrier. The large employer can afford to organize the situation for himself; next to this the insurance carrier is able to provide a solution "securing the best possible service becomes definitely a part of the insurance company's business." "By combining a large number of cases the carrier can afford to do whatever is necessary in order to secure the best possible service."

I am aware that in the beginning some of the carriers made the mistake of securing cheap medical service under the feeling that any doctor could do the work. They have profited by their experience and are now looking for help to supply the best doctors available. The medical departments of the carriers have convinced their companies that the best work pays. Quoting from Mr. Whitney: "The practical problem is then largely this: what steps should be taken so that insurance carriers may secure the best possible medical service; how can this service be furnished by the medical profession in the best possible way, consideration being given first to the quality of the service to be rendered and second to the conditions under which it is rendered as respects for instance, remuneration and the professional status of the doctor?"

Mr. Whitney suggests a panel of doctors that desire to treat compensation cases and who are competent. The trouble is that too many doctors would desire to be on the panel, and the question comes who would name the panel? And who would revise it, or police it? I have frequently heard the argument that all doctors licensed by the State were able to practice medicine and surgery in that State and therefore were able to treat any and all compensation cases. "There must be protection against the possibility of having an injured employee fall accidentally into incompetent hands but there must also be protection against having an injured employee get into the hands of the incompetent and unscrupulous through intention and collusion. Serious abuses have grown up in the compensation field of what are medical rackets. Purging the compensation system of this evil can be accomplished only by a strict surveillance with regards to the character and competency of those who are allowed to practice in this field. If the panel system is the answer, then the insurance companies and the medical profession must get together and work out details, which you must agree will take 'expert study and collective action.' "

Free choice is not feasible because the employee is not competent to make a choice and a considerable proportion of doctors are not competent to treat compensation cases. Did you ever stop to think that we as a profession do not permit the free choice of doctors in our own organizations, the hospitals?

Most hospitals have a staff and if a man selects his own doctor he is told: "no, he's not on our staff." Or if he is admitted on Tuesday and wants Dr. O. to operate he is told: "no, Tuesday is Dr. X's day." We are told we have the staff to protect the people and the hospital. Only qualified and selected doctors are allowed to operate here. And so industry and carriers try to protect the employee by selecting what it considers the best doctors to care for the injured.

I favor correcting an evil, but first prove one exists. What percentage of employees are complaining of the present method? What should be done is to see that the employer fulfills his responsibility, that racket clinics be wiped out.

When you consider the compensation costs in unselected hands as against the compensation cost when these cases are handled by selected doctors (compensation 64% higher in unselected), when you consider the days lost by the injured employee (in a series of fractures alone, selected lost 1985 days, unselected lost 3139 days), when you consider the permanent disability, then I believe you will agree with me that every doctor cannot handle these cases and that free choice of physicians is not the answer.

Our own experience corresponds somewhat to that of the insurance carriers quoted. In our erection department, where the work is in various parts of the country, we try to select the doctor, surgeon, and hospital in that community best trained for this work. The end results from this work are not so satisfactory as the work accomplished in the communities where our plants are located, where the surgical work is cared for by doctors trained in this line and under our direct supervision. The days lost are less, the compensation costs are less, the permanent disability is less. The surgeon, and hospital, who handles these cases often secures much better results than the good surgeon who sees but an occasional case.

Please remember that the injured man still has the right to select his own physician, but if he does he must do as he did before the compensation laws became effective—pay for the services. He simply waives the benefits of the law.

Someone has said that it is an alienable right to choose; if such a thing as an alienable right exists, the law did not remove it.

"Medical service under workmen's compensation is

1. An obligation of the employer
2. A right of the employee

"The employer is interested economically in getting injured men back to production, thereby saving wasteful

(a) compensation payments
(b) labor turnover
(c) burdens on the community
(d) incidental expenses imposed by law

"Surely no employer is interested in either cheap or incompetent medical attention, for it is an unsound program.

"The employee is interested in being restored to economic production because while laid up he loses

(a) the waiting period
(b) the earnings in excess of compensation
(c) the expenses naturally incidental to removal from regular activities

"He wishes speedy restoration to health and strength because he suffers the pains and burdens of injury and the mental anguish which accompanies the uncertainty of such enforced idleness.

"Granting free choice would greatly increase the expense to the employer and to the State on account of additional cost of

(a) restoration
(b) exorbitant bills impossible to combat
(c) necessity of the employment of an examining physician to keep watch of cases in hands of the various doctors
(d) increased overhead caused by the employer being completely out of touch with every case, as even his physician would be barred in many instances from seeing an injured man
(e) in view of this lack of contact the present scheme of direct and prompt payments would be impossible. Distrust and suspicion would be fostered and nearly every case would be controverted
(f) throw on the Industrial Board and the machinery of the Industrial Commissioner all the burdens and evils of a bill collection agency

"The injured man would get no benefit from the change because

(a) no argument that improved treatment would result can be advanced in favor of it
(b) it would not improve the standard of the medical profession. On the contrary, it would arrest the development of the specialized service now so spledidly functioning
(c) it would not lessen but would foster quackery, and the injured men would become the subject of all sorts of absurd treatments at the expense of the employer
(d) it would offer him as the subject for uncontrollable exploitation by unscrupulous practitioners, for there would be no incentive to prompt restoration to usefulness and health."

March 25, 1928, the New York Times published a report of the Research Board of the American College of Surgeons, from which the following is an excerpt: "We approve the law as it now stands in a majority of the States, and which specifically places the control of the surgical services in the hands of the employer. We believe that industry more fully realizes the economic, financial, and humanitarian principles which apply to these problems and . . . that, in general, industry desires to provide competent aid for its injured."

Speaking on this subject, March 13, 1922, Hon. Henry D. Sayer, Industrial Commissioner of New York said:

> "The proposition that the injured workman be given the right under the supervision of the Industrial Commission to have his own physician treat him, does not meet with my approval. I do not believe that the injured workman will be better off by being given the unbridled right to go for treatment to whomever he will, subject only to the supervision of some administrative body . . . I do not believe that in this city, with its doctors drawn from every sphere and from every country, doctors who cannot even speak English, and we are to give these injured workmen the right to go to these men without any control, that will make for an improvement in the work. Until it is shown that the injured workman is suffering under the present system, or until the medical profession takes steps to rid

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> itself of its incompetent members who are alleged to practice medicine but are actually practicing fraud, until that is done, the injured workman ought not to have the free selection of his physician."

In the United States the injured workmen have the right to choose the physician, surgeon, etc., in only three States—Utah, Rhode Island, and Massachusetts.

In Utah the law has been so construed. The results have been far from encouraging, as is indicated by the following statement by Hon. William M. Knerr, chairman Industrial Commission of Utah, at the 1929 meeting of the International Association of Industrial Accident Boards and Commissions:

> "In our State, unfortunately, we have developed what we call the ambulance-chasing doctors, who actually have runners out, men directing injured workmen to go to them, and they are not very particular in their treatment. That is an unfortunate situation, particularly in a State where we are trying so hard to preserve to the injured workman the right, the absolute right, to select his own physician; and I would like to see the day come when our medical society would take hold of this question in the right way and serve notice on all of these men who are not playing the game squarely that if they hope to be members of that society they will have to change their tactics."

In Rhode Island the injured employee has the right to select the physician and/or hospital; but in such case the employer's liability for medical and hospital charges is so strictly limited both in time and amount and so strictly conditioned upon prompt notice and reports by the physician and hospital that the employee's right is seldom insisted upon.

In Massachusetts the original law was amended to give the injured the right to choose the physician, etc., with results frequently condemned by the members of the Industrial Accident Board. Thus, for example, at the 1927 meeting of the International Association of Industrial Accident Boards and Commissions, Hon. W. W. Kennard, chairman of the Massachusetts Board, said:

> "It is an interesting thing . . . that after the experience we have had with both methods, every member of our Board, not so very long ago, went on record before the legislature in a recommendation that the insurance company should be given the right to furnish the treatment and that the employee, if he saw fit to go to his own physician, should pay his bill there for medical treatment. . . . At the present time the insurance companies, when they furnish treatment in Massachusetts, give as good as they can get."

A result of this rule in Massachusetts has been to increase the medical cost inordinately, until now it amounts approximately to half the compensation cost. For instance, in 1929, the compensation payments amounted to $6,371,511.35 and the payments for medical benefits amounted to $3,090,450.96.

"In conclusion, it is confidently submitted that no experience can be cited contrary to the proposition that the prevailing rule as to choice of physician is the best for all concerned—employers, employees, and the medical profession. The problem is to so develop and regulate practice under that rule as to eliminate or mitigate causes of friction, hardships, and occasional abuse."

Handling compensation cases is a business, and the doctor who chooses to do this work must have the proper set-up to do the work. I am convinced that it is far the best thing to have men specialize in this work, just as they do in other branches of our profession, and when possible that men specializing in this work should not be in general practice.

The smaller industries cannot afford a full time doctor. Why not a group of industries to employ one good doctor? Why not a central clinic in a district of small industries, properly supervised or conducted, to furnish this service?

The problem industry is up against is to get proper service as and when needed. In many cases they are forced to accept the present clinics because of service, and then they must keep a close check on the work.

"Certain clinics have been organized for the treatment of compensation cases which are not only on a distinctly commercial basis, but methods have been used which are thoroughly reprehensible, involving the splitting of fees, collusion with the employees of insurance carriers, and the faking of injuries."

My contention is that able medical and surgical clinics should be under close supervision, and should be brought to the same standards as our hospitals.

If the panel system is the answer then doctors could be selected from this panel by the insurance carrier or employer.

What the insurance carriers want to know is who are the doctors in each community best able and capable to handle this work. Those who support the panel theory are convinced that it can only be done by the medical profession and that we must set it up, maintain it and keep it up to standard, the only alternative being to have the State do it.

I have read with much interest the various reports and suggestions which have appeared of late, concerning the "medical aspects of the compensation laws," and some of them contain statements which to my way of thinking are not sound.

I can tell you for a certainty that accidents in industry have been reduced in frequency and severity. I can tell you that the individual has been considered in the accident prevention program. Of course there are all kinds of people in this world, shyster doctors as well as shyster lawyers and others, but I feel that employers and insurance carriers are human, that they are interested in the men, and that they want to supply good medical service, and I believe they are in a position to make the choice for the medical care needed. I am speaking now of the real industries; I know they want to feel confidence in the physician they select.

There are other sides to industry besides profit. The better industries and insurance carriers do not select a doctor because of the salary he will accept; they select on ability. I can say to you that the doctor in industry is encouraged by the management to do good work and given every opportunity to solve his problems. It is wrong to accuse industry of selecting doctors who will give testimony which is other than fair and just. There are bound to be differences of opinion, and I am sure industry will not ask of a physician that he give testimony contrary to his beliefs and conscience.

I know for a certainty that the better insurance carriers want to supply the best of medical skill. I know that they have asked of our profession to tell them who are the best doctors in the communities throughout the country to handle compensation work, and that they have asked us for a panel from which they could choose, and even to pay for the survey needed.

Do you not really feel that all interested parties should get together and solve these problems?

I feel that the bigger industries have solved their problems, and the medical departments of many of them have made distinct contributions to medicine.

I believe in paying full costs, medical and hospital, in these cases. But we must use care in the adjusting costs so that we are sure the insurance can be carried.

Speaking of the panel, let me in closing quote from Mr. Whitney's paper:

"I not only believe that this is the right solution of the problem in general but it is a particularly right way of solving it at the present time. We are confronted in our national life with the problem of developing a planned economy as a substitute for the haphazard way of handling our affairs which has maintained up to the present time and which has now proved to be impracticable in our complicated modern civilization. If this planned economy is not to go to either of the two extremes, Fascism on the one hand or Communism on the other, it will be only by the voluntary assumption by each industry and business and profession of the responsibility for keeping its own house in order. Working this problem out for each industry and business and profession will be the great contribution of the United States to the problem of a controlled social order. I certainly hope that the medical profession will see its way clear to understand this; you will doubtless need a certain amount of legislation, but not very much; the main thing is to feel that it is your job and that you can do it."

Conclusions

1. No argument that improved medical treatment would result from the "free choice

of physician,'' can be advanced in favor of it.

2. All doctors are not equally competent to do workmen's compensation work.

3. Free choice is not feasible because the greater percentage of employees are not competent to make a choice.

4. All medical clinics engaged in compensation work should be brought to as high a standard as required for our hospitals, and approved by the same organization, the American College of Surgeons.

5. Some way should be provided by the medical profession to furnish insurance carriers with a panel of the doctors capable of rendering the service needed.

6. If the panel system is accepted care must be taken to see that it is properly administered.

7. If you believe changes should be made in the present law, then let us get together with the other interested parties and work them out.

In preparing this paper I am indebted to Mr. A. W. Whitney, Mr. Tecumseh Sherman and Mr. Browne, who have given much time and thought to this subject and who have great interest in workmen's compensation at heart.

ROCKY MOUNTAIN SPOTTED FEVER*

R. E. Dyer, M. D.
Washington, D. C.

Rocky Mountain spotted fever is one member of a group of diseases scattered rather widely over the whole world. The three main diseases of this group, often referred to as the typhus group, are tsutsugamushi, typhus, and Rocky Mountain spotted fever. These diseases bear to each other a clinical, etiological, epidemiological and serological relationship. The three diseases that I have mentioned are separate and distinct, with no cross-immunity between them. There are other members of the group which are not well identified as yet.

Clinically these diseases are characterized by an abrupt onset—fever, prostration, some degree of mental confusion and a rash. There is an etiological suggestion of relationship from the fact that Rickettsia, are found in the tissues of animals and arthropods infected with these diseases. Epidemiologically they bear a close resemblance from the fact that they are all known to be carried either from man to man, or from some rodent or animal, to man by some blood-sucking arthropod. All produce agglutinins for some strain of Proteus X 19. This varies for some individual members of the group.

Immunologically, at least three of these diseases are distinct. Rocky Mountain spotted fever, the one we are chiefly interested in this afternoon, is known to have existed in the Rocky Mountain region since the advent of the white man as a settler in that region. Some cases with rather definite history go back as far as 1872. Maxey writing in 1898 gave us our first definite history of the disease. Wilson and Chowning in 1902 made an investigation of the disease in Montana and Idaho, and from their investigations concluded that there was a gopher reservoir of the disease existing in nature, and that the disease was transmitted from this gopher reservoir to man by the bite of the wood tick now known as the Dermacentor andersoni. In 1906 Ricketts began a study which showed the place that this wood tick played in the transmission of Rocky Mountain spotted fever. He transmitted disease by means of this tick, and also found ticks infected with Rocky Mountain spotted fever in nature.

With one or two exceptions Rocky Mountain spotted fever was thought to be restricted to about nine States in the northern Rocky Mountain area until 1930. In 1925 La Bier described a case of the disease in Indiana, and he was unable to connect this case with the original known infected area. In 1925 there was a case described in New York State in which the diagnosis of Rocky Mountain spotted fever was discarded because it had never been known to exist in this part of the country. There was a case described in the following year in Norfolk, Va., as a case of typhus transmitted by a tick bite. This case we now feel sure was spotted fever

In the summer of 1930 it was discovered that many of the cases occurring in Maryland and Virginia around the District of Columbia, and being diagnosed generally as typhus fever, were in reality Rocky Mountain spotted fever. We now know that practically the whole United States, with a few exceptions that I will show you on a map later, is infected or presumably infected with Rocky Mountain spotted fever. In addition to that a disease was described in 1929 in Sao Paulo, Brazil, under the name of exanthematic typhus fever. About three or four months ago we succeeded in getting a strain of virus of the Sao Paulo disease sent to us from Sao Paulo, and identified it as being a virulent strain of Rocky Mountain spotted fever. There are other diseases elsewhere over the world, as tick typhus in India, which is quite possibly Rocky Mountain spotted fever. There is a disease known as "Kenya" typhus of the province of Kenya in East Africa, which is very closely related to Rocky Mountain spotted fever, if not identical with it.

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*Read before the Medical Society of Delaware, Wilmington, September 27, 1933.

In the clinical diagnosis of Rocky Mountain spotted fever the disease with which it is most often confused is typhus, the endemic form of which is present in this country. The first point in differentiation of those two diseases is the fact that Rocky Mountain spotted fever is essentially a rural disease, while typhus is essentially an urban disease. The majority of cases of Rocky Mountain spotted fever in which a clear history can be elicited give a history of rural contact. Either their occupations expose them to areas infested with ticks, or they have been on an outing or a camping trip, or have spent the week-end out in the country.

Rocky Mountain spotted fever has an incubation period of from two to twelve days following the bite of the infected tick. Most often the incubation period is three to seven days. The last day or so of this period may show some prostration, low backache, leg pains and loss of appetite. The onset is sudden mostly with chills, repeated chills or chilly sensations, fever, prostration and headache, the appetite is lost, and constipation is the rule. Almost invariably restlessness and insomnia are present At the onset there is soreness of muscles and the joints, and the skin is sensitive to the touch. In some cases there are localized pains.

The fever comes on with the chill, and rises rapidly, each day's maximum exceeding that of the previous day. There are morning remissions which grow less as the disease progresses. The height of temperature is usually reached in the second week after the onset, usually about the tenth day. The morning remissions toward the latter part of the disease become less marked, and in some cases are practically absent. The duration of the fever is from 12 to 22 days. In most cases it is about three weeks. If recovery ensues the fever falls by rapid lysis.

The nervous and mental symptoms are often severe. Some degree of mental confusion is almost always present even in the mildest cases. This may vary from disorientation, especially on waking after a nap, or from rather wild and not easily forgotten dreams, to delirium and coma. The late manifestations, during convalescence, of nervous and mental disturbance are deafness, visual disturbances, slurring of speech, and some confusion. These may last for two or three weeks after defervescence has taken place. Convalescence may be slow but it is usually always complete.

The case fatality rate of Rocky Mountain spotted fever varies. In Idaho the case fatality rate is about 5%. In the eastern part of this country the rate varies from 22% to 25%, while in certain sections of Montana it is from 75% to 80%, and in Sao Paulo, Brazil it has been about 77%.

The rash of Rocky Mountain spotted fever is the chief point on which one must rely for clinical diagnosis. The rash comes on in Rocky Mountain spotted fever from the second to the fifth day, usually on the third or fourth day. In typhus it comes on from the fifth to the seventh day, seldom before the fifth. In Rocky Mountain spotted fever the rash first appears on the wrists and ankles. The extension is rapid to the back, the arms, the legs, the chest, and lastly to the abdomen where it is least marked. The palms and soles are commonly involved. The face is occasionally involved, and the scalp rarely. In epidemic typhus fever, the rash first appears over the lower chest and upper abdomen. The scalp is apparently never involved, in the typhus rash, and the face and palms and soles only rarely involved.

The rash of spotted fever is macular usually at the onset, or it may be maculopapular in character. It becomes fainter during the morning fever and may disappear almost entirely. The spots can be brought out during the morning remissions of fever by the application of a tourniquet to one of the extremities. During the early part of the second week the rash becomes definitely petechial in almost all cases. Some spots become confluent, deep red and purplish. In some, along toward the later part of the disease where these spots have coaleseed, we have small areas of necrosis. This is most common on the toes, lobes of the ears, fingers, etc. As defervesence occurs the rash fades and becomes brownish. It may be visible for several weeks during convalescence as brownish spots, which take on a reddish tinge, and become prominent on the application of a tourniquet or a hot bath. Desquamation takes place usually over the legs and arms where the rash has been thickest.

The laboratory diagnosis is of some aid but is not final. The differential diagnosis between Rocky Mountain spotted fever and typhus, as far as the patient is concerned, is a clinical diagnosis. Both diseases give agglutinins for Proteus X 19, in a dilution of 1:160 up to 1:10000 or even higher.

There is a neutralization test which can be performed using the patient's serum after he is convalescent. The serum may be withdrawn and mixed with Rocky Mountain spotted fever virus and injected in guinea pigs. If the patient had spotted fever there will be a definite protect in. This test is not of much value while the patient is still sick.

For the definite laboratory confirmation of the diagnosis of Rocky Mountain spotted fever in a patient, it is necessary to infect animals with blood drawn from the patient at the height of the disease. The disease may then be studied in the animals and cross-immunity tests carried out with animals infected with the strain under suspicious and known strains of Rocky Mountain spotted fever.

The prevention of Rocky Mountain spotted fever revolves around the prevention of tick bites. As you will see a little later in some of the slides, the tick is a very difficult arthropod to control over any wide areas. The best protection is personal prophylaxis. When one has gone into an area during the tick season where spotted fever is known to have existed or exists, the clothes and body should be examined at least once and preferably twice every day to remove ticks.

There is a vaccine for the treatment of Rocky Mountain spotted fever which is of value. It protects almost surely against death from a subsequent infection, and protects very well against getting the infection at all.

(Lanton demonstration)

Discussion

President Speer: Is there any discussion on Dr. Dyer's paper?

Dr. Morris Harwitz (Wilmington): I should like to ask the doctor if action can be demonstrated by sight, or merely serologically.

Dr. P. W. Tomlinson (Wilmington): When I was a boy I used to prowl about the woods a good deal, and we would get what we called seed ticks, small ticks, and sometimes in my endeavors to dislodge one the head would pull off and be buried in the skin. I never expect to go out where these ticks are which produce spotted fever, but some of those present may see fit to go, and I would like to ask Dr. Dyer what he has found to be the best method for cleaning them off the body.

I remember when I began the practice of medicine some fifty-five years ago, leeching and bleeding was practiced a good deal, and it occurred to me in treating one patient where leeches were applied, having the matter of economy in mind, while they were very busy sucking the blood, to take a pair of scissors and take off the tail end. That would keep going, and it wouldn't take so many leeches, but the minute the scissors came down on it, he pulled out. If the ticks would do that, it would be easy to take a pair of scissors and snip the tail end of the tick off, and off they would come.

Dr. R. O. Warren (Wilmington): I am very much interested in Rocky Mountain spotted fever for two reasons. In the first place I happen to be a native of Montana, and I never have seen a case very close out there, but two years ago when I was in Baltimore they did have three cases there at that time. There was an interesting thing brought out and I don't believe Dr. Dyer mentioned it.

I think one of the later laboratory tests that have been devised is taking the blood from the patient and inoculating it intratesticularly in rabbits, and that was tried in these cases we had, but nobody was very sure about the presence of the Rickettsia bodies. Dr. Shipley of the Harriett Lane Hospital, Baltimore, at this time considered the idea of inoculating over the cornea of the eye of the rabbits with cold blood from these patients, and he succeeded at that time in demonstrating the Rickettsia bodies. I believe the work he did appears in the Bulletin of Johns Hopkins Hospital for last year.

Dr. Dyer: In reply to Dr. Warren's question, I may say that the chief difficulty in the diagnosis of Rocky Mountain spotted fever lies in the differentiation of the disease from typhus fever, and Rickettsia are found in both conditions.

About pulling the ticks off, or cutting them in two. An infected tick is a dangerous sort of thing to handle. We have traced one or two cases to people who got their infection by pulling ticks off dogs and crushing them on their fingers. The best way to remove a tick is by a pair of tweezers, light tweezers with a curved end. The tick should be seized firmly by the head and pulled off by speedy action. If it is done in this way I do not think one will run any risk of leaving the tick's head in the skin.

There was one question, about the virus of Rocky Mountain spotted fever. Rickettsia have been described for Rocky Mountain spotted fever. They have been shown in the tissues of animals and tissues of arthropods. The same thing is true of typhus and the rest of this group of diseases. These Rickettsia are almost constantly present in infected ticks, but bodies which cannot microscopically be told from Rickettsia may be found in normal ticks.

I think the preponderance of evidence is that these Rickettsia are some phase at least of the etiological agent of spotted fever and the other members of these typhus-like diseases.

DELAWARE ACADEMY OF MEDICINE

Library Notes

The literature of medicine and dentistry has grown to such vast proportions that it must of necessity be shared in common. In developing our collection, which has as its nucleus approximately two thousand volumes on medicine, dentistry, surgery and allied subjects, we are mindful that a library is intended for the joint use of individuals, and that its facilities should afford as wide a range of reading and investigation as possible.

With the results of the world's greatest teachers, clinics, and laboratories within reach of his fingertips in a library, it is within the power of everyone to keep pace with the present. The investigator turns to the library to compare his results with those of others, and for this he must have the records of past generations as well as those of yesterday. We read of Osler at twenty-six traveling from Toronto to Boston to look up "a small matter" which he wished to "make as complete as possible."

"The best thing that can be done with a library is to use it," quoting from James P. Warbasse, M. D. "The best place for a medical library is in the midst of medical practice, where things are being done. The doctor who knows and uses his literature gets along best. The medical library, the repository of the wisdom of all time, serves the individual doctor to broaden the understanding of his problems, to raise himself to a vantage point from which more can be seen, and to give him added joys and satisfaction in his profession."

For indexes and bibliographical references the library has recent volumes of the Quarterly Cumulative Index Medicus, the Index Catalogue of the Library of the Surgeon General's Office, and Black's Index of Periodical Dental Literature.

A list of recent accessions follows:

Anatomy

Davis, G. G. Applied anatomy. 8 ed. rev.
Phil; Lippincott, 1929, 638p.

Piersol, G. G. Human anatomy. 9 ed. rev.
Phil; Lippincott, 1930, 2104p.

Anesthesia

Gwathney, J. T. Anesthesia. 2 rev. ed.
N. Y.; Macmillan, 1929, 799p.

Circulatory System

Lewis, (Sir) T. Diseases of the heart.
N. Y.; Macmillan, 1933, 297p.

Dentistry

Bunting, R. W. Oral pathology.
Phil; Lea, 1929, 495p.

Churchill, H. R. Human odontography and histology.
Phil; Lea, 1932, 298p.

Ennis, L. M. Dental roentgenology.
Phil; Lea, 1931, 288p.

Feldman, M. H. Manual of exodontia. 6 ed. thor. rev.
Phil; Lea, 1930, 220p.

Fones, A. C. comp. and ed. Mouth hygiene. 3 ed.
Phil; Lea, 1927, 348p.

Fones, A. C. Preventive dentistry.
Phil; Lea, 1925, 220p.

Goslee, H. J. Principles and practice of crown and bridge work. 5 ed.
Brooklyn, Dental Items of Interest, 1931, 478p.

Guerini, V. History of dentistry, from the most ancient times until the end of the eighteenth century.
Phil; Lea, 1909.

Guerini, V. Life and works of Giuseppangelo Fonzi.
Phil; Lea, 1925, 136p.

Gwinn, C. D. Text-book of exodontia.
Phil; Lea, 1927, 242p.

Haden, R. L. Dental infection and systematic disease.
Phil; Lea, 1928, 165p.

Ivy, R. H. and Curtis, L. Fractures of the jaws.
Phil; Lea, 1931, 180p.

Kronfeld, R. Histopathology of the teeth and their surrounding structu.
Phil; Lea, 1933, 479p.

McBride, W. C. Juvenile dentistry.
Phil; Lea, 1932, 182p.

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Phil; Lea, 1931, 344p.

Marshall, J. A. Diseases of the teeth.
Phil; Lea, 1926, 331p.

Mead, S. V. Diseases of the mouth.
St. Louis, Mosby, 1932, 932p.

Mead, S. V. Oral surgery.
St. Louis, Mosby, 1933, 1087p.

Noyes, F. B. Dental histology and embryology. 4 ed.
Phil; Lea, 1929, 527p.

Prinz, H. Dental formulary. 4 ed.
Phil; Lea, 1930, 364p.

Prinz, H. Diseases of the soft structures of the teeth.
Phil; Lea, 1928, 496p.

Smith, D. T. Oral spirochetes and related organisms.
Balt; Williams and Wilkins, 1932, 243p.

Strang, R. H. W. Text-book of orthodontia.
Phil; Lea, 1933, 756p.

Taylor, J. A. History of dentistry.
Phil; Lea, 1922.

Turner, C. R. and Anthony, L. P. eds. American text-book of prostheti dentistry. 6 ed.
Phil; Lea, 1932, 795p.

Ward, M. L. ed. American text-book of operative dentistry. 6 ed.
Phil; Lea, 1926, 818p.

Webster, A. E. ed. Manual for dental assistants.
Phil; Lea, 1932, 356p.

Winter, L. Exodontia, oral surgery and anesthesia. 2 ed.
St. Louis, 1931, 455p.

Medical Research Council. Special report series.
Lond.; His Majesty's Stat. Off.
No. 70—Mummery, J. H. Structure of teeth in relation to dental disease. 1922, 24p.
No. 97—Comm. for investigation of dental disease. Pt. 2. The incidence of dental disease in children. 1925. 48p.
No. 140—Mellanby, May. Pt. 1. Dental structure in dogs. 1929. 308p.
No. 153—Mellanby, May. Pt. 2. A. Diet and dental disease. B. Diet and dental structure in mammals other than the dog. 1930. 94p.
No. 159—Comm. upon dental disease. Influence of diet on caries in children's teeth. 1931. 19p.
No. 171—Smyth and Young. Facial growth in children. 1932. 83p.

Becker, Erik. Zur Kenntnis der Bedeutung der Zahne fur die Ausnutzung der Nahrungsmittell im Verdauungsapparát bei normaler Sekretion der Magendrusen.
Berlin, de Gruyter, 1926, 41p.

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Chic. Univ. Chicago Press, 1932.

Dermatology

McKee, G. M. X-Rays and radium in treatment of diseases of the skin. 2 ed.
Phil; Lea, 1927, 788p.

Ormsby, O. S. Practical treatise on diseases of the skin. 3 ed.
Phil; Lea, 1927, 1262p.

Diagnosis

Cabot, R. C. Physical diagnosis. 10 ed.
Balt; Williams and Wilkins, 1930, 529p.

Dictionaries and Directories

Anthony, L. P. Dictionary of dental science.
Phil; Lea, 1922, 324p.

Dorland, W. A. American illustrated medical dictionary. 16 ed.
Phil; Saunders, 1932, 1493p.

MacCracken, J. H. ed. American universities and colleges. 2 ed.
Balt; Williams and Wilkins, 1932, 1066p.

Meyers, M. K. ed. Lang's German-English dictionary. 4 ed.
Phil; Blackiston, 1932, 926p.

Foods, Dietetics, Nutrition

Bogert, L. J. Diet and personality.
N. Y.; Macmillan, 1934, 223p.

McLester, J. S. Nutrition and diet in health and disease. 2 ed.
Phil; Saunders, 1931, 891p.

Gynecology and Obstetrics

Curtis, A. H. ed. Obstetrics and gynecology.
Phil; Saunders, 1933, 3 v. index.

History of Medicine

Blanton, W. Medicine in Virginia in the 17th Century.
Richmond; Wm. Byrd Press, 337p.

Blanton, W. Medicine in Virginia in the 18th Century.
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Blanton, W. Medicine in Virginia in the 19th Century.
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Garrison, F. H. Introduction to the history of medicine. 4 ed.
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Kolmer, J. A. Infection, immunity and biologic therapy. 3 ed.
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Stitt, E. R. Diagnosis and treatment of tropical diseases. 5 ed.
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Medical Jurisprudence, Toxicology

Stryker. Courts and doctors.

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Phil; Saunders, 1930, 862p.

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Cecil, R. L. ed. Text-book of medicine, by American authors. 3 ed.
Phil; Saunders, 1933, 1664p.
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Musser, J. H. ed. Internal medicine, its theory and practice.
Phil; Lea, 1932, 1316p.
Tice, F. ed. Practice of medicine.
N. Y.; Prior, 1920, 12 v. index.

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Allbutt, (Sir) T. C. Notes on the composition of scientific papers, 3 ed.
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Montague, C. E. A writer's notes on his trade, 3 ed.
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Quiller-Couch, (Sir) A. On the art of writing.
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Henderson, D. K. and Gillespie, R. D. Text-book of psychiatry. 3 ed.
N. Y.; Oxford Univ. Press, 1932, 595p.
Jelliffe, S. E. and White, W. A. Diseases of the nervous system. 5 ed.
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Adler, F. H. Clinical physiology of the eye.
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Duke-Elder, W. S. Text-book of ophthalmology.
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May, C. H. Manual of diseases of the eye. 13 ed.
N. Y.; Wood, 1930, 461p.
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Keeler, J. C. Modern otology.
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Law, F. W. Mastoids roentgenologically considered. 2 ed.
N. Y.; Hoeber, 1929, 42p.
Thomson, (Sir) S. Diseases of the nose and throat. 3 ed.
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Balt; Wood, 1929, 807p.
Kanavel, A. B. Infections of the hand. 6 ed.
Phil; Lea, 1933, 532p.
Speed, K. Fractures and dislocations. 2 ed.
Phil; Lea, 1928, 952p.

Pathology

Ewing, J. Neoplastic diseases. 3 ed.
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MacCallum, W. G. Text-book of pathology. 5 ed.
Phil; Saunders, 1932, 1212p.
Geschickter, C. F. and Copeland, M. M. Tumors of the bone.
N. Y.; Amer. Jol. Cancer, 1931, 709p.

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Holt, L. E. and McIntosh, R. Holt's diseases of infancy and childhood. 10 ed.
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Marriott, W. M. Infant nutrition.
St. Louis, Mosby, 1930, 375p.

Physical Therapy Including Electrotherapy

Kovacs, R. Electrotherapy and the elements of light therapy.
Phil; Lea, 1932, 528p.

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Starling, E. H. Principles of human physiology. 6 ed.
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Phil; Lea, 1931, 339p.
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Phil; Lea, 1930, 388p.

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Christopher, F. Minor surgery. 2 ed.
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DaCosta, J. C. Modern surgery. 10 ed.
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Horsley, J. S. Operative surgery. 3 ed.
St. Louis; Mosby, 1928, 893p.

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Hare, H. A. Text-book of practical therapeutics. 21 ed.
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CANCER COMMENT

Status of the Present Treatment of Carcinoma of the Cervix Uteri

Marion Z. H. Freeman*
Wilmington, Del.

Prior to the last decade of the nineteenth century, the results of surgical treatment of cancer of the cervix were very poor. In 1895 the work of Wertheim, Clark, Ries, and Rumpf, describing various improvements and new ideas, appeared. Even in the hands of these skilled men the operative mortality ranged from 8 to 26% in groups of cases considered operable.

With the discovery of the x-ray and radium a new method of treatment became available, in which the operative mortality is negligible, in spite of the fact that a general anesthetic is frequently used during the administration of the radium.

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*Secretary-technician of the Delaware Junior Clinics.

In the beginning the results were variable and distressing, prohibiting any conclusion as to the comparable efficiency of these forms of treatment, but as more was learned of the physical properties of radium and x-ray rapid strides were made in the perfection of the treatment and a decided improvement was noted in the reports of five-year cures.

Dr. W. P. Healey, (N. Y. St. Jour. Med., Jan. 1, 1934) outlines the following procedure of treatment used at the Memorial Hospital, New York, with favorable results:

Cases are divided into three clinical groups, combining Schmitz's groups one and two into the first, which he calls early or favorable. This group is composed of patients in which the lesion is confined to the cervix. Group two includes patients in which the fundus or parametrium or both are involved moderately, and is called advanced or unfavorable. Group three are patients in which there is widespread invasion or metastasis. This group is designated as pallitive, and treated accordingly.

In a group of 1574 cases mentioned by Dr. Healey, 97.3% were of the squamous cell type and the remaining 2.7% glandular or adenocarcinoma. Histologically, the degree of radio sensitivity varies with the degree of malignancy. The tumors are divided into four grades, the first being composed of the most mature and least radio sensitive cells, and the fourth of the most embryonal or anaplastic type, which is most radio sensitive. With the clinical groups and pathological grades known the choice of treatment and the prognosis can be estimated with a considerable degree of scientific accuracy. Many clinics have definite plans for treatment of radium and x-ray varying with the equipment available and the personal opinion of the operator.

Dr. Healey advises a four-step plan of treatment as follows: (A) A high voltage cycle of 4 treatments of 700 Roentgen units, each two anterior and two posterior, given with a 200 K. V. machine; (B) ten to fourteen days later radium is applied to the vaginal surface of the lesion by means of vaginal applicators, for 1000 to 2000 milligram hours; (C) The following day, under anesthesia, two radium capsules in tandem formation are placed in the cervical and supra-cervical canals for 2000 and 1000 milligram hours respectively; (D) Eight weeks following the first x-ray cycle a second similar x-ray cycle is given; after which, in four to six weeks, in practically every instance the response will be found to be satisfactory. It is the cancer that has invaded other pelvic structures distant from the cervix which will terminate the life of the patient unless it can be controlled. This method of treatment which is called "cross-fire radiation method" is planned to destroy not only the growth on the cervix but any extension or metastases into the parametrium. Dr. Healey considers it doubtful that enough radiation can be obtained two inches from the radium applicators to control cancer at or beyond that point. Interstitial radiation with radium needles or radon seeds is not used as a part of the routine of the Memorial Hospital but may be used as a later treatment for any portion of the lesion that fails to regress completely, but this is not often necessary.

An important step in the treatment of patients who have received this method of treatment is the post-radiation follow-up. They should be observed at monthly intervals for the first six months, then every three months for the first year, after which six-month intervals suffice, but this follow-up should be continued for two or three years.

The essential conclusion is that the treatment of cancer of the cervix should be irradiation exclusively, the primary operative mortality in surgical therapy being one consideration.

That early diagnosis and treatment is an important factor in the establishing of a favorable prognosis goes without saying. The Schiller method of diagnosis (Surg. Arm. & Obstet., Book 50, 2, 1933), has proven an important aid in the diagnosis of early lesions. Dr. Healey feels that earlier diagnosis seems out of the question until women who have borne children can be induced to resort to periodic pelvic examinations at intervals of nine to twelve months in order that suspicious changes may be detected and checked up by biopsy if necessary.

WOMAN'S AUXILIARY ASSOCIATION

Mrs. James Blake, *President*,
Hopkins, Minnesota
Mrs. Robert W. Tomlinson, *President-Elect*,
Wilmington, Delaware
Mrs. Robert E. Fitzgerald
Chairman, Press and Publicity

The Nobel Prize in Medicine has been awarded to Dr. Thomas Hunt Morgan of Pasadena. Dr. Morgan is director of the William G. Kerckhoff biological laboratories of the California Institute of Technology. Dr. Robert A. Millikan, himself a winner of the Nobel Prize, gives the following estimate of Dr. Morgan's researches:

"The discoveries that are grouped around the idea of chromosomes and genes—discoveries that enable us to connect hereditary qualities with actual minute objects observable in microscopes—represent probably as fundamental an advance in biology as has ever been made in history. It is altogether comparable with the discovery of the circulation of the blood by Harvey or the germ theory of disease by Pasteur. This discovery and the whole group of developments that have been associated with it have been made by a group of Americans, of which Thomas Hunt Morgan has been universally recognized leader for the past twenty years."

The reports which come in from the various States each month are most interesting and inspiring, but—there are not enough of them. Many States have sent in no reports since last June and we are anxious to know what they are doing. As has been said before, the interchange of ideas is the source of greater inspiration to activity than any other one thing. By learning what is being done elsewhere, by carefully selecting what is best adapted to our needs and by adding whatever new ideas we may have, we may arrive at a course of action admirably suited to our needs. Our responsibility does not stop here—we should in turn pass on to others what we are doing. I urge every State chairman of press and publicity to do her share. Write and tell me what your State is doing—won't you?

As we promised you in the last News Letter we shall send you each month a short list of some of the articles appearing in State journals throughout the country which may be of interest to you. We have been careful to include no scientific articles in this list. Self-education for an auxiliary member does not mean a delving into the study of the science of medicine, on the other hand we should aim to be conversant with those aspects of our husbands' profession which are discussed most by the layman because in the approach to the layman many more ways are open to us than to the doctors themselves.

READING LIST

The Movies and Health—Editorial, Virginia Medical Monthly, January, 1934.

The Healing Gods or Medical Superstition—By Joseph L. Miller, M. D., West Virginia Medical Journal, November, 1933.

Some Trends in Medical Economics—By R. G. Leland, M. D., West Virginia Medical Journal, December, 1933.

Shall I Study Medicine?—Editorial, Minnesota Medicine, November, 1933.

Federal Food and Drugs Act—U. S. Senate Bill 1944 (Copeland)—Editorial, California and Western Medicine, January, 1934.

MISCELLANEOUS

State Board of Health

Diphtheria Immunization in Wilmington, 1934

The New Castle County Medical Society at the meeting on Tuesday evening, February 20th, accepted the State Board of Health plan whereby the practicing physicians of Wilmington will be given the opportunity of conducting the diphtheria prevention work in the city.

Plans are now being made to begin the treatments the week of March 5th, 1934. If you care to participate in the campaign, will you kindly signify on the enclosed postal card the days and hours when it will be convenient for you to administer the treatments. If the card is not received from you, it will be understood that you do not care to participate.

Briefly the plan is as follows:

The alum precipitated diphtheria toxoid will be supplied without cost to the physicians.

The State Board of Health will supervise the work of field nurses who will visit the homes of pre-school and school children and obtain the request for the treatments from the parents and direct the children to the offices of the physicians selected by the parents.

The fees agreed upon by the Medical Society are one dollar for those who can afford to pay, the usual fee for those on relief (if satisfactory arrangements can be made with the Relief Commission*) and for those who are not on relief but who cannot afford to pay there is no charge. The physician is to determine into which class each belongs. The State Board of Health will not be held responsible for the payment of any of these fees.

All diphtheria prevention clinics operated in the city by the State Board of Health have been discontinued.

There are approximately 15,000 children under nine years of age in the city who have not received the preventive treatments.

As soon as the enclosed card is received from you, the nurses will be prepared to send the cases to your office.

For the purpose of procuring protective treatment for every child in Wilmington, the city is being divided into districts as follows:

District No. 1—On the east by Market Street, on the north by Brandywine Creek, on the west by Franklin Street and on the south by Front Street and Lancaster Avenue.

District No. 2—On the east by Franklin Street, on the north by Delaware Avenue and 19th Street, on the west by City Line, on the south by 4th Street.

District No. 3—On the east by Franklin Street, on the north by Brandywine Creek and the City Line, the west by City Line and on the south by Delaware Avenue and 19th Street.

District No. 4—That portion of the city south of Lancaster Avenue and Front and Franklin Streets and south of Fourth Street from Franklin to Dupont and east of Dupont.

District No. 5—That portion of the city south of Fourth Street and west of Dupont.

District No. 6—That portion of the city south of the Christiana across Third Street Bridge.

District No. 7—That portion of the city south of Brandywine Creek and east of Market Street to Third Street Bridge.

District No. 8—That portion of the city north of Brandywine Creek and east of Market Street.

District No. 9—That portion of the city north of Brandywine Creek and west of Market Street.

Whole Blood

In the treatment of Measles

(Taken from Schamberg & Kolmer)

"The technique may be any one of several simple procedures as follows:—

1. According as 20 or 40 cc. of blood are required, one or two 25-cc. Record syringes are sterilized, 2 cc. of 5 per cent solution of citrate placed in each, the syringe or syringes filled with blood from the donor, the contents mixed and the injection given intramuscularly into the thighs or buttocks.

2. Or the required amount of citrate solution (2 cc. of a 5 per cent. solution for each 20 to 25 cc. of blood) is placed in a sterile bottle, blood aspirated from a vein of the donor and expelled into the bottle. As a general rule, only one syringe is required, as it may be easily filled twice without washing between fillings, a finger closing the end of the needle to prevent bleeding while the syringe is being emptied. After the blood is secured the tourniquet is released, the syringe washed out once or twice with saline solution and the injection given.

3. Or one, two or more syringefuls of blood may be collected and expelled into a sterile bottle or flask containing glass beads, shaken for a few minutes for defibrination and the blood injected intramuscularly.

4. Or, if the patient is placed close at hand, and only 20 to 25 cc. of blood are required, a syringeful may be collected, using a gauge No. 16 or 18 needle to facilitate quick filling, the tournique released, needle and syringe withdrawn, and the blood injected at once (but not too rapidly) before it has had time to coagulate in the syringe."

The amount usually given as a dose is 20 cc.

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*Ed. Note—The Relief Commission has no funds that can be applied to prophylactic treatments.

EDITORIAL

DELAWARE STATE MEDICAL JOURNAL

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Reprints of original articles will be supplied at actual cost, provided request for them is attached to manuscripts or made in sufficient time before publication.

All correspondence regarding editorial matters, articles, book reviews, etc., should be addressed to the Editor. All correspondence regarding advertisements, rates, etc., should be addressed to the Business Manager.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

It is suggested that wherever possible members of the State Society should patronize our advertisers in preference to others as a matter of fair reciprocity.

Subscription price: $2.00 per annum in advance. Single copies, 20 cents. Foreign countries: $2.50 per annum.

Vol. VI March, 1934 No. 3

Re: F. E. R. A.

The agreement entered into between the Medical Society of Delaware and the Emergency Relief Commission, fully reported in The Journal for December, 1933, is now three months old. Like all such propositions that are both new and large, there has been some lost motion, some misunderstanding, and perhaps some injustice, but taken in the by and large, we know, on the one hand, that the majority of the profession expresses satisfaction with the present arrangement, and on the other hand, the Commission is well satisfied that the most of the medical men are playing ball properly.

To those who complain at the delay in getting their pay checks we wish to say that it takes about thirty days for the bills to pass through the commission's offices. Bills can be materially expedited if the following instructions, as outlined by the Accounting Department, are followed:

"Our audit of January bills for medical services to our clients reveal that many doctors are not following the regulations as agreed upon by your committee with the Relief Commission and published in your December proceedings."

"Our complaint falls into four classifications: (1) Only one copy of bill submitted. (2) A bill for each client submitted instead of one bill listing all clients attended during the calendar month. (3) No diagnosis is given and calls are not itemized by dates and kind of call. (4) Bill submitted before case is dismissed."

"We therefore again ask that your committee call to the attention of all doctors the following:"

(1) Send 3 copies (instead of 2) of bill to Accounting Department, Emergency Relief Commission, Room M-213 Delaware Trust Building.

(2) Send only one bill, covering only those cases completed during the previous calendar month.

(3) List on bill name of client attended, address and total charged for case.

(4) Attach to bill, white authorization form, listing on back date of each visit, charge for medication, mileage, etc., and diagnosis.

"You will note that we now request the bill be made in triplicate instead of duplicate. The additional copy is necessary for our records."

Please disseminate this letter so that bills submitted March 1st for February services will conform. It would also help us expedite the work of auditing if doctors presented their bills promptly. Authorization was issued in January to 69 doctors. To date only 29 have submitted their bill.

A few complaints concerning the free choice of physician have been made, but, when fully investigated, they have usually been found to be due to some misunderstanding on the part of the patient. Likewise, any delay in receiving the written authorization within 48 hours of the initial request can be promptly terminated by a telephone call to the Commission.

The only points now that need clarification are: (1) The tendency of certain physicians to accumulate cases over the week-end, when the Commission offices are closed; and (2) The establishment of a proper schedule of fees for special services such as surgery, x-ray, cardiology, etc. Both these problems are under consideration by the Commission and the Committee on Medical Economics, and we have no doubt that a mutually satisfactory understanding will be reached.

EDITORIAL NOTES

DEAR DOCTOR:

THE JOURNAL and the Co-operative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service.

It is absolutely *free* to you.

The Co-operative Bureau is equipped with catalogues and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in THE JOURNAL, and do not know where to secure it; do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages, but if they are not, we urge you to ask THE JOURNAL about them, or write direct to the Co-operative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want THE JOURNAL to serve *you*.

When you come to the end of a perfect day, night begins, and then — another day. For five years THE JOURNAL has been printed by Cann Brothers and Kindig, who have rendered exceptional service. These good folks have, corporately speaking, passed to the great beyond, and we of THE JOURNAL mourn for the loss of tried and true friends. For five years, a perfect day; for three months, night.

And then — another day, whose dawning finds us back again with even older friends, The Star Publishing Company, who were the printers of THE JOURNAL from 1916 to 1923, inclusive. We have no doubts as to achieving success, so far as the printing and such matters is concerned; we know, from past experience, the courtesy, consideration and efficiency that awaits us. And so — good luck, Star!

We are trying to keep our directory page up-to-date. If the secretaries of the various societies listed there will notify us as soon as any changes are made in their lists proper corrections in THE JOURNAL will be made at once. Thank you.

When a man has successfully carried the load for fifteen years, and left behind him, locally and nationally, a record that will be hard for a Delawarean to surpass, should not some public recognition be made of it? How about giving Ex-Secretary La Motte a testimonial dinner?

PROPAGANDA FOR REFORM

HEMP MASSAGER NOT ACCEPTABLE.—The Council on Physical Therapy reports that the Hemp Massager, manufactured by the Conley Company, Inc., Rochester, Minn., consists of two rubber balls mounted on spindles at right angles to each other. As this device is pulled along over the body, the rubber balls pinch the skin and by friction lift it and underlying superficial tissues above the contour of the body or limbs. The Council investigated this massager and declared that it did exactly what, in practicing good massage, a masseur tries to avoid; it pinches the superficial tissues instead of picking up and kneading deep tissues as well as the superficial. Even if the massager faithfully duplicated hand massage there are certain statements in the advertising for which critical evidence is not available. The Council objected to the claims made for the relief of headache, nervousness and constipation. In reality, these conditions might be caused by some impaired function other than that for which massage is justly indicated. The Council regards the advertising as objectionable, because satisfactory evidence is not in its possession to substantiate the efficacy of massage with this unit in the conditions mentioned. It has declared the Hemp Massager ineligible for inclusion in its list of accepted devices. (Jour. A. M. A., February 10, 1934, p. 455.)

NUTRO NOT ACCEPTABLE.—The Committee on Foods reports that the Nutravena Company, Battle Creek, Mich., submitted a cooked mixture of roasted peanuts, wheat gluten, and sodium chloride (proportions not known) called "Nutro. A Highly Nourishing Nut and Grain Food." The advertising unjustifiably ascribes special health values to this ordinary peanut and wheat gluten mixture and falsely alleges that it is more nourishing and "healthier" than meat and that meat is harmful, producing "pimples or facial blemishes," containing "poisonous bacteria...uric acid ...and ptomaine poison." It is incorrectly described as containing "choice nut meats and full cereal grains." The product is not "rich in vitamines" (implying all the vitamins) or "all body-building essentials." The company advised in a general way that new advertising would conform to requirements of the Committee and that it is not its "desire to put misleading advertising out to take advantage of the gullible and uninformed." The new label for the product, however, carries the claims given above. No descriptive statement identifying the ingredients of the product accompanies the trade name. The company has ignored requests that it demonstrate that its present advertising complies with the requirements of the Committee. This product will therefore not be listed among the Committee's accepted foods. (Jour. A. M. A., February 10, 1934, p. 456.)

Baldinger's Razava Bread.—The Committee on Foods reports that H. Baldinger and Company, St. Paul, submitted a bread called Baldinger's Razava Bread, prepared from rye bran, shortening, salt and water without the use of any special leavening agent. The advertising states or implies that this bread is a specific cure for diabetes, indigestion and dyspepsia. The advertising represents an attempt to exploit the diabetic or the dyspeptic patient by misinforming him of the true values of the bread or the proper treatment of these pathologic conditions. It promotes self-diagnosis and self-treatment by the sick who should be under the care of the physician. Advertising is incapable of prescribing the diet or treatment of the sick. The manufacturer was advised of the Committee's report but has ignored its recommendations and criticisms for correcting the advertising and labels. This product will therefore not be listed among the Committee's accepted foods. (Jour. A. M. A., February 17, 1934, p. 538.)

Alpha- Dinitrophenol — A Metabolic Sitmulant.—A year has elapsed since alphadinitrophenol was introduced into therapeutics as a metabolic stimulant by Tainter and his collaborators of the Stanford University. Considering the potency of the drug, few untoward results or accidents have been reported. The only definite side-action from the therapeutic use of the drug is a skin rash, which occurs in about one out of every fifteen cases. The rash is uncomfortable for a few days and then disappears without sequelae. There have been no deleterious effects observed so far on the kidneys, but rather the contrary. Likewise the liver appears not to be damaged. The introduction of dinitrophenol into therapeutics has aroused widespread interest in metabolic stimulants in general, and in substitutes for this drug, in particular. Already certain British workers are proceeding to test the therapeutic actions of a related cresol. No information is at hand on the frequency of undesirable effects from this cresol, nor is its clinical toxicity or efficiency established. Therefore the dinitrocresol is still in the experimental stage and not ready for general therapeutic use. In contrast, the past year's experience with dinitrophenol has shown it apparently to be a relatively safe and reliable metabolic stimulant with which the practitioner may obtain therapeutic results. This does not mean that dinitrophenol should be given to every obese patient. In those cases in which diet has failed and thyroil is either not needed or not tolerated, dinitrophenol may be used with good prospects of benefit. However, this agent must be used only under carefully controlled conditions and with due regard for the possibility that more extensive use may bring to light as yet unsuspected toxic effect. (Jour. A. M. A., February 17, 1934, p. 542.)

Urotex.—According to the formula on the label, Urotex consists of two tablets, A and B. Tablet A (gray) contains hexamethylenamine, ext. nux vomica, acid benzoic, and atropine sulphate. Tablet B (brown) contains ext. buchu, ext. corn silk, ext. triticum, pot. bicarbonate, sodium borate, caffeine and atropine sulphate. These formulas represent the shotgun type of proprietary sold to physicians in the period preceding 1906, except that the composition appears on the label.

The product has not been submitted to the Council on Pharmacy and Chemistry for consideration. It goes without saying, however, that the Council would not approve such a product. (Jour. A. M. A., February 17, 1934, p. 561.)

OCTOZONE NOT ACCEPTABLE FOR N. N. R.—The Council of Pharmacy and Chemistry reports that the Octozone Corporation of America presented a labile gaseous preparation called "Octozone" and the apparatus ("Electroniseur") for preparing this gas from oxygen by the action of an electrical discharge. The product is proposed for the treatment of a large variety of diseases, in particular various forms of arthritis, by local application, by baths in closed bags, by subcutaneous or intramuscular injection, by rectal administration or by mouth dissolved in water. As the evidence seems to be fairly conclusive that "Octozone" is a mixture of O_2 and O_3, the Council decided that no proprietary name for the gas could be recognized, since ozone is not a new discovery, either from a chemical or from a therapeutic standpoint. The Council found the evidence of therapeutic usefulness submitted by the firm unconvincing. It appears that, under the impression that the gas was a new preparation, investigators have used it on patients without preliminary work on animals; at least such work was not reported in the available data. Among the various conditions treated with Octozone are furunculosis, varicose ulcer, fibrositis, ulcerative colitis, sciatica, "rheumatism," subphrenic abscess, osteomyelitis, hemorrhoids, and Oxyuris vermicularis infestation. The use of ozone in the treatment of wounds is not new, and according to some investigators it has a field of therapeutic usefulness, although this is very limited. It appears that the intelligent employment of ozone may yet find for it a therapeutic niche. But such use as it has so far received under the name "Octozone," cannot but further discredit the employment of this oxidizing agent in the treatment of disease. The Council declared Octozone unacceptable for New and Nonofficial Remedies because, according to the available evidence, it is the well known ozone marketed under a proprietary name with extravagant, unwarranted and even dangerous therapeutic claims. (Jour. A. M. A., February 24, 1934, p. 605.)

FELSOL.—According to a brochure entitled "Contribution to the Therapy of Bronchial Asthma," by Dr. M. Kaercher, the composition of Felsol is now given as: Metozin 0.9 (Phenazone 0.25, Anilipyrine 0.4, Iodpyrin 0.25), Caffeine 0.1, digitalis and strophanthus glucosides 0.0015, and the alkaloid lobelia inflata 0.005 Gm. Tests made some time ago in the A. M. A. Chemical Laboratory indicated that the product contained an acetanilid derivative in addition to other products. The substance may be looked on as a shotgun type of mixture promoted in typical "patent medicine" style. (Jour. A. M. A., February 24, 1934, p. 640.)

Pain and Tenderness of Abdominal Wall

According to JOHN BERTON CARNETT, Philadelphia (*Journal A. M. A.*, Feb. 3, 1934), pain and tenderness occur far more frequently in the abdominal wall than in the abdominal viscera. Palpation over relaxed abdominal muscles fails completely to differentiate parietal from visceral tenderness. Parietal tenderness and, inferentially, pain are demonstrated best by making firm palpation while the patient balloons out the abdomen and holds the abdominal muscles as tense as possible. Hypersensitiveness, either on pricking or stroking the abdominal skin with a pin, or on pinching a liberal fold of skin and fat, indicates parietal tenderness. Pain and tenderness of the abdominal parietes are variously interpreted by different diagnosticians. The majority fail to consider the possibility of these two symptoms being located in the abdominal wall, neglect to apply the special tests to determine their parietal location, and wrongly ascribe them to an existent or non-existent lesion of an underlying viscus. Many times when the pain and tenderness are not recognized as parietal they are attributed to malingering, hysteria or some other vague neurosis, because they are atypical of organic visceral disease or the latter has been excluded by extensive clinical and laboratory studies, often including one or more futile laparotomies. The four areas of distribution of the first lumbar nerve afford many points of interest in the study of parietal pain and tenderness. Libman's classification of patients into sensitive and hyposensitive in accordance with his studies at the mastoid tip and styloid process is not applicable to cases of pain and tenderness of the abdominal parietes. The only parietal pain and tenderness of fairly consistent type in location, size and frequency of association with a visceral lesion of which the author is aware is an area the size of a thumb nail situated in the midline about midway between the umbilicus and the tip of the xiphoid process, in ulcer of the stomach or duodenum. It is his belief that the shoulder or scapular reference of pain and tenderness in biliary colic occurs only as an aggravation of a neuralgia, primarily due to some extraneous cause, and that the neuralgia is not cured by complete removal of the biliary pathologic changes. Parietal pain and tenderness of the abdomen are usually due to a neuralgia and, as a rule, are independent of any intra-abdominal lesion. Failure to recognize neuralgia by the pinch test of skin and fat leads to many erroneous diagnoses. Pain and tenderness may not always be due to the same mechanism, a fact which seems to have escaped many clinicians. Chronic parietal pain and tenderness that have been present for months or years are not due to and are not cured by the operative removal of intra-abdominal lesions. Chronic parietal tenderness in the absence of spontaneous pain is a not infrequent observation in routine physical examinations in patients with spinal lesions causing mild neuralgia. Chronic neuralgia may start in the chronic form but more commonly it is preceded by recurrent acute attacks which are frequently mistaken for acute visceral disease. Acute parietal pain and tenderness are usually due to acute infections that do not require operation and disappear rapidly on subsidence of the toxema resulting from the infections. Acute pain and tenderness of the abdominal wall, and not infrequently elsewhere on the body surface, are caused by acute appendicitis infrequently, by acute pelvic inflammatory disease fairly commonly and by other intra-abdominal infections rather rarely. Acute toxemia is responsible for the great majority of the cases in which acute intra-abdominal infections cause acute parietal pain and tenderness, especially when the affected parietal area lies entirely outside the Head zone for the particular visceral lesion present. Most commonly, acute pain and tenderness of the abdominal wall are not associated with an acute intra-abdominal lesion, and on the other hand acute visceral lesions commonly do not cause parietal pain and tenderness. Acute neuralgia calls for treatment of the causative acute infection or spinal injury. Scoliosis is treated by appropriate exercises and by elevation of the heel of the shoe if a short leg is found. Parietal pain and tenderness due to spinal arthritis are promptly relieved in the majority of cases by mild irradiation of that portion of the spine from which the affected nerves emerge. Treatment of excessive lumbar lordosis by the Goldthwait special exercises to correct bad body mechanics cures parietal pain and benefits digestive disturbances, although the tenderness may be slow in disappearing.

Observations on Individual Sensitiveness to Pain, with Especial Reference to Abdominal Disorders

Emanuel Libman, New York (*Journal A. M. A.*, Feb. 3, 1934), discusses individual sensitiveness to pain, substitution symptoms and radiations of pain. Some other important subjects, such as sensitiveness of diseased blood vessels and pains due to them, can only be touched on. Besides summarizing his earlier publications, he gives a survey of recent investigations. Theoretical questions are not discussed. Many methods of gauging sensitiveness to pain have been suggested. The simple test that he employs is carried out by first pressing the thumb against the tip of the mastoid bone and then slipping the finger forward and pushing against the styloid process. Pressure on the normal mastoid bone causes no pain and therefore serves as a control. It is important not to rub the bone, because rubbing the periosteum of any bone is apt to evoke pain. Pressure in the direction of the styloid process is painful to some persons and not to others. The sensitive point is really not the styloid process but a branch of the auricularis magnus nerve. Algesimeters do not appear to be of service in practical clinical tests.

Clinical Aspects of Abdominal Pain

F. M. Pottenger, Monrovia, Calif. (*Journal A. M. A.*, Feb. 3, 1934), states that exaggeration of a sensory stimulus, whether it is transmitted centrad over cranial or spinal afferent nerves from the skeletal structures or over the afferent systems that accompany the sympathetics and parasympathetics to the internal viscera, may lead to discomfort or pain. Pain is the automatic danger signal that tells the individual to beware, for the normal mechanism is irritated in an abnormal manner, or even its integrity may be threatened. In considering pain, it is necessary for the clinician to remember that the perception of painful stimuli is bound up with the patient's physiologic stability and that the complaint of sensory changes will differ greatly in different individuals. What may be a painful stimulus to one person may not be to another. The author discusses the following phases of pain as they pertain to abdominal pain; the visceral nervous system, the nature of visceral pain, the segmental nature of visceral pain, the difficulty of comprehending reflex effects, the difference in acute and chronic pain and the usual location of pain for the principal abdominal viscera.

Sarcoma of Cheek Following Tricho X-Ray Treatment for Hair on Face

Ira I. Kaplan, New York (*Journal A. M. A.*, Feb. 24, 1934), points out that repeated roentgen treatments may cause destructive lesions of the skin. Because of its potential danger, irradiation should be employed only by those properly qualified by special training and experience. These destructive changes may occur many months or even years after treatment. Malignant changes may occur following necrosis in an over-irradiated skin area. The removal of hair by x-rays is fraught with danger. The author reports a case in which sarcomatous degeneration followed repeated treatments with x-rays for hair on the face, applied by Tricho, a commercial beauty parlor.

BOOK REVIEW

San Francisco Cancer Survey—Eighth Preliminary Report. By Frederick L. Hoffman, LL. D., Consulting Statistician, Prudential Insurance Company, Pp. 314. Paper. Newark: Prudential Press, 1933.

The bulk of this survey makes available a vast amount of detailed information regarding cancer statistics, since it is based upon an analysis of about 62,000 cancer death certificates from a number of important localities in this country and abroad. The material is classified with regard to such items as average age, average known duration of the disease, distribution of cancer by organs and parts, percentage of deaths preceded by operation, autopsies, etc. Forty pages of the report are devoted to a discussion of cancer in relation to diet and nutrition, a topic which the author considers to be one of the most important aspects of the whole problem. It is a distinct surprise to pass from a painstaking analysis of cancer mortality records to a highly speculative discourse on cancer in relation to diet and nutrition in which the author concludes that the chief and underlying causative factors in cancer are probably to be found in dietary disorders inherent in a highly urbanized society. In the statistical part of this report students of the cancer problem will find much information useful for comparative purposes.

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TREATMENT OF MYOMA UTERI*

Floyd E. Keene, M. D.
Philadelphia, Pa.

More than one-fifth of all women after the age of thirty-five are bearers of myomatous uteri and it is not uncommon to find these tumors in women of less mature age. Their treatment, therefore, is a problem which frequently confronts us, the proper solution of which depends upon an intimate knowledge of the pathology and life-history of these tumors as well as a thorough appreciation of the advantages and limitations of the various therapeutic measures.

The development and growth of myomata are dependent upon ovarian function; conversely, they undergo regression or may disappear following cessation of this function. Rarely, if ever, are these tumors found before the twentieth year, and a myoma never develops in a normal uterus after the menopause. We are dealing, therefore, with a lesion inherent to the woman whose sex apparatus is functionally active, and often it occurs at an age when the maintenance of this function is of paramount importance in the happiness and well-being of its bearer.

These tumors are characterized by slow growth. Some remain stationary over a period of years, while in others a rapid increase in size may take place, particularly in the presence of certain degenerations which arise as the result of an impoverished vascular supply. While some authorities deny the existence of sarcomatous degeneration, we believe that it does occur, but its incidence is not more than one or two per cent. The part that a myoma plays in the development of corporeal carcinoma is a controversial subject; the fact that myomata are associated lesions in one-fourth of all cases of fundal carcinoma is at least suggestive that these tumors may in some way be predisposing factors in the development of this type of malignancy. As we shall bring out in the course of our discussion, these fundamentals are vital to the determination of appropriate therapy.

We share the commonly accepted dictum that many myomas require no treatment. This applies to small, symptomless tumors in women over thirty-five years of age, but particularly in those who are approaching or have passed the menopause. This expectant policy may be followed in younger women, but we believe that in most instances a myomectomy is indicated. At this age, the chances are good that the tumor will grow, thus making a more extensive myomectomy or even a hysterectomy necessary later. Further, by this plan, the menstrual and procreative functions are conserved, and the incidence of sterility or repeated abortions is lessened.

When this expectant policy is adopted, the importance of repeated examinations must be impressed upon the patient. Our custom is to advise these at monthly intervals for three months, and if no change is found the interval may be increased to four months provided the patient remains symptom free. As a general rule, we do not inform the patient of the presence of a tumor in order to save her unnecessary anxiety.

This watchful waiting policy is applicable to a comparative small group of myoma patients, for in most instances profuse uterine bleeding, pain, or pressure symptoms demand active treatment which consists of either irradiation or operation. In some clinics operation is the method of choice in all cases, while others employ irradiation to the exclusion of surgical measures. We believe that each of the plans is to be condemned. Our experience has taught us that both irradiation and surgery have a place in the treatment of these tumors; the indications for each method are sharply defined, and the use of the one to the exclusion of the other is not to the best interests of the patients.

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*Read before the Medical Society of Delaware, Wilmington, September 27, 1933.

Difference of opinion also exists as to the superiority of radium or roentgen rays. Both methods are successful in the control of bleeding and in decreasing the size of the tumor, because each produces a cessation of ovarian function upon which the growth of the tumor depends and without which regression of the tumor occurs. We prefer radium to roentgen therapy in most cases, because the application can be made at the time of the curettage and exploration of the uterus which should precede both forms of irradiation to eliminate the presence of carcinoma, an early pregnancy, or a pedunculated sub-mucous tumor.

Radium Irradiation

Twenty years experience with radium has not only convinced us of its value in the treatment of myomata, but it has also engendered a profound respect for its dangers when improperly applied. Based upon this experience, we have formulated certain principles which govern us in the selection of irradiation or operation, and close adherence to these has yielded results which are, on the whole, satisfactory.

Ideal conditions for the use of radium are to be found in a patient above the age of forty-five, who presents a tumor not larger than a three months pregnancy, the only symptom of which is profuse bleeding. Under these circustances, one application of radium is 95 per cent efficient in the control of the bleeding and in bringing about a gradual diminution in the size of the tumor. The procedure entails no mortality, a minimum of morbidity, and only a few days hospitalization. At this age the question of child-bearing does not come into consideration, and the incidence of severe menopausal symptoms following ablation of ovarian function is not high.

The number of patients who meet these ideal indications is comparatively small, for we believe that the following conditions *contraindicate the use of radium* and demand operation:

(1) *Tumors larger than a three months pregnancy.* Such tumors often present extensive degeneration because of a deficient blood supply, and the endarteritis induced by radium may still further impair their nourishment and thus accentuate these degenerative processes. The larger tumors are often complicated by adnexal lesions ill-suited to irradiation, the detection of which may be impossible prior to operation. Large tumors may distort the uterus to such an extent as to preclude a thorough diagnostic curettage and thus an area of corporeal cancer may escape detection. While regression of myomata commonly attends the induced menopause, the larger tumors do not disappear and remain as a menace either because of extensive degenerations which are prone to occur or may predispose to the development of carcinoma.

(2) *Rapid increase in size.* Rapid enlargement of a tumor is usually due to sarcomatous or extensive benign degeneration, both of which are urgent indications for operation.

(3) *Pressure symptoms.* Frequency and urgency of urination, increasing constipation and other pressure symptoms are of purely mechanical origin and their relief is dependent upon removal of the tumor. While regression of the tumor will follow irradiation, the process is slow and may be insufficient to relieve the symptoms.

(4) *Tumors associated with pelvic pain.* Pain in association with a myoma is usually due to one of the following conditions: adnexal disease, especially chronic inflammation, degeneration of the tumor, adenomyoma or endometrial cysts of the ovary. Radium may light up a quiescent inflammatory lesion and is to be avoided in any patient whose history suggests its presence. For obvious reasons, degenerating tumors should never be subjected to irradiation. Adenomyomas of the uterus often do not respond satisfactorily to irradiation, and our experience is confirmed by Kelly who states that in the treatment of these tumors "radium is of no avail." Again, pain may be due to an associated endometrial cyst of the ovary, the treatment of which usually falls in the domain of surgery. While it may be impossible to determine prior to laparotomy the exact cause of the associated pain, the conditions revealed at operation will practically always justify the choice of surgical treatment.

(5) *Tumors in young women.* Regression

or disappearance of a myoma requires sufficient irradiation to ablate ovarian function, a procedure which is never warranted in young women. The administration of a so-called sub-sterilizing dose of radium or roentgen ray is dangerous because patients vary in their susceptibility to irradiation and a permanent menopause may follow what is ordinarily considered a small dosage; further, were such a procedure successful in temporarily ablating ovarian function, the tumor would again grow with resumption of function.

(6) *Symptoms developing in a tumor after the menopause.* The profuse bleeding caused by a myoma prior to the menopause is, in large measure, nothing more nor less than an expression of normal ovarian activity modified by the presence of a mass in the uterine wall which increases the blood loss by inducing a local venous congestion. In other words, the bleeding is primarily of physiologic rather than pathologic origin. In bleeding from a myomatous uterus after the menopause, the reverse is true; here ovarian function no longer plays a part and extensive pathologic changes in the tumor itself, or associated malignancy in the uterus, tubes or ovaries are the usual causes. It is evident, therefore, that irradiation is not only illogical but actually dangerous. This also holds true for rapid increase in size of the tumor or pain, both of which are indicative of degenerative processes in the tumor or associated pelvic lesions of a surgical nature.

(7) *Pedunculated submucous or subperitoneal tumors.* Radium is useless in the treatment of pedunculated tumors and in the submucous type; its action may be followed by necrosis and infection.

(8) *Profound anemia.* The application of radium in profoundly anemic patients is attended by considerable risk. Their diminished resistance increases the possibility of necrosis or infection.

(9) *Anemia secondary to a degenerating tumor.* We have had several patients who have shown a marked secondary anemia in association with tumors not causing sufficient uterine bleeding to account for the anemia and in whom careful studies failed to demonstrate a cause for the anemia other than the pelvic lesion. At operation, an extensive necrosis of the tumor was found, and rapid improvement following removal of the tumors warrants the conclusion that the degeneration was responsible for it.

(10) *Previous pelvic operation.* A loop of intestine adherent to the uterus may be seriously damaged by the intra-uterine application of radium.

(11) *Stenosis or obstruction of the cervical canal.* The radium should be inserted well above the internal os, otherwise a subsequent cicatricial contraction of the narrow cervical canal may lead to complete stenosis, resulting in hemotometra or pyometra.

(12) *Uncertain diagnosis.* The prime requisite for successful irradiation is accuracy of diagnosis. If examination under anesthesia does not reveal the exact nature of the pelvic pathology, operation is the preferable procedure.

(13) *Extremely nervous patients.* Severe symptoms of the induced menopause constitute the chief objection to irradiation. One cannot prophesy with certainty what the effect of irradiation will be so far as these symptoms are concerned, but they are usually more pronounced and more prolonged in the highly nervous woman. In such patients, we believe that operation with conservation of ovarian function will yield better end results than irradiation.

(14) *Fear of radium.* We are consulted not infrequently by patients who have an unwarranted fear of the effects of radium. If we are unsuccessful in convincing the patient that her fear is unfounded, we choose operation even though the pelvic condition is ideally suited to irradiation. It has been our experience that when radium has been used in spite of this fear, although the pelvic lesion has been relieved all subsequent ills may be erroneously ascribed to its lasting effects.

It is evident that with close adherence to these contraindications, a large number of myomas immediately fall into the operative group. A recent review shows that radium has been employed in only 22.8 per cent of our cases. Reports from our clinic reveal a steady decrease in the relative number of patients treated by radium. This decline in percentage does not mean that we are losing faith in the method, but rather that the contraindications are being more rigidly observed.

Roentgen Irradiation

This form of therapy is preferable to both radium and operation under certain conditions. This applies particularly to patients in the late forties with large tumors or with small tumors complicated by chronic adnexitis who are poor operative risks because of a profound anemia. The bleeding can be controlled by roentgen therapy, appropriate measures can be employed to combat the anemia, and if operation is subsequently necessary it can be performed under more satisfactory conditions. Roentgen therapy is comparatively safe in tumors complicated by a chronic adnexitis, but the intrauterine application of radium often induces an acute exacerbation of the infection. Roentgen treatment is also of value when obesity, pulmonary, and thyroid complications or cardio-vascular disease contraindicate operation.

With both radium and roentgen therapy, the incidence of severe menopausal reactions constitute a formidable objection. In the last analysis we have made we find that, with radium, menopausal symptoms were absent in 31.9 per cent of the cases, were mild in 28.8 per cent, moderate in 22.7 per cent, and severe in 16.5 per cent. With roentgen-therapy, only 12.5 per cent were free from symptoms, they were mild in 25 per cent, moderate in 37.5 per cent and severe in 25 per cent. The evaluation and grading of these symptoms is often difficult, but a careful as well as an unbiased investigation of this phase of the subject convinces us that the above figures are representative of what can be anticipated.

Surgical Treatment

Based upon the principles which govern us in our selection of treatment, more than 75 per cent of the patients with symptom-producing myomata require operation. We prefer the abdominal route, although vaginal hysterectomy is the ideal procedure in the occasional patient who presents a small tumor with considerable relaxation of the pelvic floor. The removal of large tumors by way of the vagina is to be looked upon as a feat in surgical gymnastics rather than an example of good judgment. Obviously, vaginal myomectomy is indicated when a pedunculated tumor projects from the cervical canal. If the cervical canal is dilated or if the tumor is necrotic, intrauterine exploration, while indicated to eliminate cancer, must be done gently because of the danger of spreading infection, nor should radium be applied even though a small fundal myoma seems to indicate its use. For the same reason, should other tumors be present and of such a nature as to demand abdominal hysterectomy, operation should be deferred for at least four weeks after the myomectomy.

Abdominal myomectomy is the ideal operation in the young woman in whom maintenance of the procreative as well as the menstrual function is of prime importance. We question the wisdom of this procedure, however, in the presence of multiple tumors of even moderate size, deeply imbedded in the uterine wall.

If hysterectomy seems indicated two questions arise: First, shall the hysterectomy be complete or partial, and second, what shall be the disposition of the ovaries? We realize that the first of these questions is controversial, but we believe that, with few exceptions, supravaginal amputation is the operation of choice. Reports from several clinics indicate that total hysterectomy is not attended by increased mortality or morbidity, but these results do not apply to the operation as performed by the majority of surgeons.

The fact is indisputable that carcinoma of the cervix may develop after a supravaginal hysterectomy, but this is comparatively rare. Approximately 800 patients with cervical cancer have been admitted to our service and only nine of these were in a cervical stump, and the histories of at least two warrant the assumption that cancer was present at the time of the hysterectomy. Since 1910, several thousand hysterectomies have been performed in our clinic and only three patients are known to have developed cancer of the retained cervix. We are convinced that the increased mortality and morbidity attendant upon the universal adoption of total hysterectomy would far exceed that incident to subsequent carcinoma of the cervical stump. The incidence of carcinoma can be largely eliminated by cauterization or repair of the diseased cervix as a preliminary step to the supravaginal operation.

As regards the disposition of the ovaries, we advocate conservation when possible, for by so doing distressing menopausal symptoms do not develop or are moderate in severity. Our results show that 82.5 per cent of our patients with conserved ovaries had no menopausal symptoms, and in only 3.9 per cent were the symptoms severe. In striking contrast is the group of castrated women in whom severe menopausal symptoms were present in 25 per cent and absent in only 20.2 per cent.

Ovarian conservation is important also from the standpoint of the preservation of regular menstruation in young women who require a supravaginal hysterectomy. In patients under forty-five years of age we attempt to conserve sufficient endometrium to permit of regular, though lessened menstruation. Following this plan regular menstruation has occurred in 19 per cent. In none of these has bleeding been profuse and with the exception of two patients in whom the reaction was mild, menopausal symptoms have not developed. These results tend to confirm our belief that a complementary relationship exists between the functional activity of the ovaries and the endometrium, and that the maintenance of this relationship promotes the well-being of the individual.

In this brief review, we have attempted to present the principles which govern us in our management of patients with uterine myomata. There is no lesion in the pelvis which requires more careful individualization in the choice of therapy. Each patient presents a different problem and the selection of proper treatment is possible only after judicious consideration of all factors concerned.

Discussion

Dr. Charles P. Noble (Philadelphia): I have listened with great interest to Dr. Keene's paper, and wish to congratulate him. My memory goes back far enough to have known about all of his predecessors in his chair at the University of Pennsylvania, starting with Goodell. Goodell was said to be the finest master of medical English after the death of Oliver Wendell Holmes. I doubt whether any of Dr. Keene's predecessors could have presented a better balanced or more accurate picture of the subject than we have heard today.

This subject is one that is very reminiscent to me. The older members of this Society, and also Dr. Keene — although he doesn't belong in that group but he is a gynecologist — know that this is a subject which I studied intensively from the 80's on until about 1908. Offhand, I can't say how many papers I inflicted on my profession during that period. I not only studied it intensively in my own practice, but also from the literature.

When I first became interested in fibroid tumors, the belief of the profession was that a woman who had a fibroid tumor should feel very happy at the fact because she wouldn't need to be operated on, which would be true did she have an ovarian tumor. I was quite young at that time, but I wasn't long in learning that the women didn't agree with the doctors. In the first place, she wouldn't have come to see the doctor had she not been suffering. There are symptomless fibroids, but the doctors don't see them, because as long as the woman doesn't suffer she doesn't consult the doctor. What the percentage of those is, of course, is unknown, but the probability is that it isn't large.

Dr. Keene's paper covered the whole subject very systematically. I shan't take up your time to cover it all in what I have to say. What struck me early in my experience with fibroid tumors was the fact that the subject was a very complex one. We said we operated for fibroid tumors, but actually at the operation the complications, so-called, were not uncommonly far more grave than was the fibroid tumor itself. Not uncommonly it was the complications that brought the woman to the doctor rather than the tumor. In other words, the associated disease in the annexa and in the ovaries, and the reactions in the patient's constitution from anemia, from constipation, with associated trouble in the heart and in the blood vessels, oftentimes were of far more gravity than the pelvic conditions.

The subject evidently required intensive study which it hadn't had. That was one of the parts of the doctor's paper which interested me, because all those things which I worked at and worked over when they were not in the literature at all are now very systematically and nicely presented in the paper.

I think perhaps it will be sufficient for me to say that the dictum concerning fibroid tumors when I began with the subject was that a fibroid tumor should not be operated upon unless the woman was in danger of death from hemorrhage, and when I finished with the subject it was exactly reversed, namely, that every case—and that, of course, included the symptomless cases which didn't come to the doctor — but those with symptoms should be cured unless in the particular woman the gravity of whatever was called for to cure her was greater than the risk from the morbid conditions present. In other words, the dictum was exactly reversed, and I find that the twenty-five years since I ceased to trouble myself about it haven't altered that situation.

The only thing which is new concerning fibroid tumors since that day is the relation of irradiation by radium and the roentgen ray, and I was pleased and gratified at the sanity of the development of that question by Dr. Keene. Of course, no woman wants to be operated on if it isn't necessary, and a wise surgeon will avoid operation if he can. In the early days of radium and the x-ray, as in the early days of any procedure, doctors being human, always anticipate greater benefits from what is new than time proves to be the case. This was a part of the sanity of Dr. Keene's presentation — that the field for the usefulness of radium and the roentgen ray was distinctly limited.

Now, part of this new business is that in the beginning we only hear about the favorable aspects of the subject, whether it is in surgery or medicine, and it becomes a fad, and it is only after a time when the unfavorable side of any subject which is new in medicine finally comes to an understanding. After the long years of study of the degenerations of fibroid tumors which I made, the question in my mind was whether these tumors would degenerate after they were irradiated. Now, it is true that twenty years have passed by, and when men with as sane an outlook on the subject as Dr. Keene have studied it for twenty years, if there were to be many degenerations time enough has elapsed for them to appear, so apparently it is not going to cut as large a figure as I thought. Again I wish to congratulate you.

President Speer: Is there any further discussion on Dr. Keene's paper?

Dr. J. P. Wales (Wilmington): Dr. Noble mentioned symptomless fibroids. We had a case recently which I think was very illuminating, as to how easy we might have missed it. In fact, we did miss the diagnosis but were confident she had a fibroid. It was the lack of symptoms she had. She was in splendid physical shape; she had no detectable symptoms whatever. All she had was this bleeding occasionally between her periods. I thought it was a simple thing and insisted on an examination which was refused at first in the early part of the summer. I still insisted on it when I saw her occasionally through the summer. Finally last week she consented to an examination and we still thought that it was a case of a small fibroid there. The only symptom she had was a slight erosion around the cervix; otherwise she was in splendid physical condition, heart, lungs and everything. Hysterectomy was done last Saturday and it was a very marked cancer of the fundus.

RADIUM AS A THERAPEUTIC AGENT*

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Radiology is a broad subject, developed by physicists, biologists and radiologists, whose progress has been so rapid and versatile that it has been almost impossible for any one person to master the entire subject. It is difficult, if not impossible, to talk of the modern therapeutics of radium without also mentioning x-ray therapy and the frequent use of electro-thermic surgery; this all tieing in and co-operating with general surgery and all its special branches.

There is probably little difference between the biological effects of x-ray and radium, but I am convinced that there is a very definite difference in their therapeutic effect. Radium can be used in locations which are inaccessible to x-ray, such as inside the nose, mouth, external auditory canal, vagina, rectum, etc. Radium can be placed into needles for insertion into the tissue. Small, suitably screened applicators can be placed over and around and even into a superficial growth. And in many other ways radium can be so manipulated as to obtain a better result than can be had by the most powerful x-ray. On the other hand, the x-ray is more suitable and more efficient where disease covers large area. For various practical reasons radium is more suitable in one case, while x-ray will be more suitable in another.

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*Read before the Medical Society of Delaware, Wilmington, September 27, 1933.

In most malignancies, however, the combination of x-ray and radium is the more effective. In my experience malignancies are to be treated with the most vigorous radiation and surgical methods; the patient or his family to be frankly advised of its gravity and of the necessity of systematic treatment and follow up studies, always maintaining a conservative attitude as to its prognosis.

The rays of x-ray and radium may either stimulate, inhibit, or destroy living tissue, but the action is not the same on all tissue. Vascular endothelium and lymphoid tissue are extremely sensitive to radiation, while cartilage and bone are extremely resistant. Experiments have demonstrated that very rapidly growing cells are those most affected by such radiation.

Radium therapy, as well as most other measures for treating the sick, has suffered from a lack of study of its physics, and of the different biological and therapeutic effect in the use of different filters and dosage, and from a failure to realize that it is applicable to selected conditions. These morbid processes may need local or general treatment before radium is to be administered. Obviously, thorough study of the patient, where possible, is necessary before treatment is decided upon. A local glandular enlargement may be only the local manifestation of malignancy generalized through the body. Consequently treatment directed solely at the site of the involvement would be entirely inadequate. After the examination and diagnosis has been made then the type of treatment, whether it is to be radium or x-ray, either separately or in combination, is to be decided upon, as is also the question of whether surgery or electro-surgery are to be used in the case. Associated abscess or associated infection of the adnexae contraindicate the introduction of radium into the uterus. Only recently at the Wilmington General Hospital, I advised against using radium in a patient with an elevated temperature until we could determine its cause. In about three days an acute inflammatory process was evident and the gynecologist was obliged to operate. This case clearly demonstrated that it was one for surgery and not for radium.

Time does not permit a description of treatment, in detail, even of one of the many pathological conditions that have come to us. In a former paper, before this Society, I discussed the employment of radium in carcinoma of the body and of the cervix of the uterus, and I shall only mention these as the most frequent malignancies encountered in gynecological cases.

An extract from an article by John Osborn Pollak states: "There is still confusion in the mind of the practitioner as to what should be done in the particular case of cervical cancer which he observes. The operable group constitutes only about ten per cent of the total number of cases seen. By operable case is meant," he says, "one with a growth which is entirely within the confines of the cervix, the uterus being movable, with no detectable perimetral involvement. The other ninety per cent are not operable and can only be treated by irradiation, and do not come into competition with surgery. We may state the superiority of radium over surgery in the treatment of cervical cancer is now generally recognized by surgeon and gynecologist all over the world."

Radiation technique in the treatment of cancer of the cervix has made rapid strides and is no longer a hit and miss affair. The dose to be obtained in different parts of the lesion and the pelvis can be determined with reasonable accuracy, and the minimum amount of radiation necessary to take care of the lesion is fairly well known.

Many pelvic and a few general conditions may produce pathological hemorrhage. In the so-called myopathic hemorrhage radiation is practically specific. In all young women the minimum doses should be employed. This is preferable to the production of a permanent irradiation amenorrhea, with its accompanying menapausal symptoms and sterility. Twenty-four hundred milligram hours of radiation will practially bring about sterility in two or three months.

Malignancy of the mouth is one of the difficult and discouraging diseases to treat. Hard gamma radiation inside and outside the mouth, combined with x-radiation externally have been given by us by using special heavy filtration and with varying but not too enthusiastic results. When carcinoma has involved the jaw bone or hard palate the prognosis should be most guarded. We have one case, however, in which the hard palate was perforated with a hole about 2 cm. in diameter when first seen by us. Two and one-half years have elapsed since this patient was referred, and he appears to be in good general condition and with but little more destruction of the palate than when radiation was first begun.

In this connection I shall relate another mouth case in defense of the profession. Perhaps there are but few physicians who cannot recall some oversight, or perhaps lightly considered an apparently innocent growth or ulceration in some patient; but I know that the greater evil is in the neglect or ignorance of the patient. The particular patient to whom I refer was a white woman who consulted her physician for the first time about a sore in her mouth under an artificial denture. The next morning he had her in my hands. A radiograph made of the area in the mandible showed definite bone destruction which was without great distress to her.

Certainly the early recognition of the disease in the most important point in any individual case, and has more definite bearing upon the ultimate prognosis than any other one factor. Early diagnosis is quite as important to the radiologist as to the surgeon. It must be constantly born in mind that the more recent the lesion the more difficult it is to recognize. Biopsy offers a safe, easy and almost certain method of diagnosis in all accessible tumors and is employed extensively by nearly all specialists who, as a class see many more tumors than does the general practitioner, and who would, therefore, be more likely to recognize cancer in its early stages. This demonstrates that even the most experienced realize the difficulty often encountered in formulating an early diagnosis. For the radiologist or surgeon who employs radium or the x-ray in conjunction with surgical methods, biopsy is of the greatest help in determining the character of the tumor, and will often be the deciding point as to whether surgery or irradiation is the method to be employed.

In primary operable cases of carcinoma of the breast, Schreimer states that those treated by radical operation and radiation yield the largest percentage of clinically well five year cases.

Members of the profession as well as the laity think of radium only in connection with the treatment of malignancies. While this is largely true, there are many resistant benign lesions which respond favorably to radium therapy and in a manner not obtained by other remedial agents. Myopathic hemorrhage has already been mentioned. Fibroid tumors of the uterus are also a fertile field for radiation treatment. Elevated types of nevi yield to radium in a most striking manner. Recently I have had under treatment a child three months of age with a conspicuous nevus on its forehead which has responded in a most pleasing manner. Another patient with a blood vessel engorgement, with uncontrolled hemorrhage, on the septum of the nose, has disappeared with a fibrotic area remaining. A case of remangioma of the upper eyelid with profuse hemorrage was referred with the thought that it was a case for electro-coagulation, but instead a radium plaque was applied, with most gratifying result. Recently observed, almost no remains of the tumor could be seen and with complete eye lid function. Radium in epithelioma probably gives better cosmetic effect than other methods. Toxic thyroid is also often much benefited.

This short paper briefly mentions the most frequent applications of radium in my hands, and a hope is expressed for better co-operation between practitioner and radiologist so that the clinical results may be still further improved.

INFANT FEEDING AND NUTRITION*

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By far the most important part of pediatrics is infant feeding and nutrition. It is our only claim for specialization. Otherwise, the pediatrician is a general practitioner with an age limit.

In this discussion tonight, I will give you a plan of feeding for the normal infant and will not consider any of the abnormalities that might arise. I feel quite sure that if the feeding of normal infants is thoroughly understood, there would be fewer abnormal cases develop.

In the last twenty years in Pennsylvania, we have seen marked changes in the infant mortality rate. In 1906, 166 out of every 1,000 babies died; 48 of this number died of gastrointestinal conditions. Last year, only 60 babies died out of every 1,000 live births, but only eight died of gastrointestinal conditions. This tells a story that is well worth repeating and means that we are getting a better milk supply, the people are understanding general hygiene and cleanliness better; that they are using ice to keep their milk cool, and that the doctors themselves are learning more about infant feeding. The old idea of infant feeding was a rather "hit and miss" affair with many trials and many errors. Today we feel that it is on a sound basis. Sufficient studies have been made and enough men have had practical experience to show us that we can base our formulas on quite definite needs of the infant.

The basic food elements, fat, protein, carbohydrate, minerals, water and vitamins, must be considered in preparing the formula. Infants are fed according to their expected weight for their age. Based on satisfactory experience, we know that an infant needs:

2 grams of fat, per pound per day
1½ grams of protein per pound per day
5 grams of carbohydrate per pound per day, and
3 ounces of fluid per pound per day.

This gives you the basic needs for every infant and it is doubtful whether a child will grow on less food than given above. From the caloric standpoint, we find that this amounts to 45 calories per pound per day. There are sufficient minerals in milk to meet the average needs with the exception of iron.

In order to make this practical, we find that if we use 1½ ounces of whole cows' milk with about 4% butter fat content, we will secure 2 grams of protein, 1½ grams of fat and 2 grams of carbohydrate, so our simplified formula is based on 1½ ounces of whole milk per pound of body weight. In addition, we need three extra grams of carbohydrate per pound per day which can be expressed 1/10 of an ounce per pound per day. This is the minimum quantity a child needs for growth. There is a maximum quantity, expressed as 2 ounces of milk per pound per day, and 1/8 ounce sugar per pound per day.

Babies differ somewhat in their caloric needs, depending somewhat on the age of the child. During the first four months of life, their caloric needs vary between 50 and 60 per pound per day. In the second four months, their needs vary between 45 and 55 calories per pound per day; and in the third four months of the first year, their needs vary between 40 and 50 calories per pound per day. There are times, however, when the caloric requirements are not fully met and the exceptions are well to remember. The newborn infant, at the starting of artificial feeding, during acute illness, during hot weather, in the over-fat child, we do not aim to meet the caloric requirements. On the other hand, there are times when additional calories are needed. The very active child, the rapidly growing child, and the malnourished child, as a rule, all need more calories than stated above.

A few of the common caloric values should be remembered. 1 ounce of whole milk yields 20 calories; 1 ounce of skimmed milk yields 10 calories; 1 ounce of any kind of sugar yields 120 calories. It is well to remember that the sugars vary somewhat in weight. 2 tablespoons of cane sugar and Karo syrup equal 1 ounce; 3 tablespoons of lactose equal 1 ounce; and 4 tablespoons of dextri-maltose equal 1 ounce.

A great deal of discussion has been given to the frequency of feeding. Most of the children can be fed on either 7 or 6 feedings daily during the first 3 months. From three to six months you may give either five or six feedings daily. From nine to fourteen months, four feedings daily. After this period, three meals a day are satisfactory. Many children will drop the 2:00 a. m. feeding when about two months of age and most children are willing to drop the 10:00 p. m. feeding at nine months of age.

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*Read before the New Castle County Medical Society, Wilmington, February 20, 1934.

A safe rule to follow in determining the amount of food at each feeding is to add 2 ounces to the age in months; that is, a three-months-old child can easily take 5 ounces of formula at a feeding. This rule will hold good up to six months. I would suggest that you never use more than 8 ounces of formula at any feeding.

A simple formula for feeding the newborn in case the breast milk is not available is as follows: Considering the average birth weight of the newborn as 7 pounds, the initial formula for the child of this size should consist of 6 ounces whole milk, 1 level tablespoon of lactose, and 12 ounces boiled water, dividing this into 6 bottles of 3 ounces each, feeding every four hours. During the first day or two, the newborn infant will take a small portion of this, but in about a week or ten days, the average infant will take the full 3 ounces of his formula, will not vomit and will have normal stools. When this period is reached, the formula should be gradually increased to the amount that the child needs for its weight. It is well to remember that we do not expect weight gain on the formula given above, for it yields only 26 calories per pound, body weight. The object, as stated before, is to keep the calories low for the newborn child until such time as we are sure of its digestive capacity. When this time is reached, the formula can be increased to the child's actual needs. When you have finally reached the point where the caloric value of your formula is between 45 and 60 calories per pound, you can confidently expect growth to occur.

I want to emphasize again the need for progressing slowly in feeding the newborn. There is no advantage in overfeeding during this period, because of the great likelihood of indigestion occurring.

An example may be taken of a three-months-old child who weighs 12 pounds. If we give this child a maximum amount of sugar, which is 1/8 of an ounce per pound of body weight, we find that it will require 1½ ounces of sugar. (In terms of lactose, this would be 4½ tablespoons). Its milk needs, to supply fat and protein, will lie somewhere between 1½ and 2 ounces per pound. If we strike the average, we find that it will need 1¾ ounces of whole milk per pound, body weight, each day. This 12-pound child would need 21 ounces of whole milk. Its fluid needs for the day at 3 ounces per pound would be 36 ounces per day. If this child is fed every four hours, six feedings in 24 hours, and 5 ounces at a feeding, our formula then would consist of: Whole milk, 21 ounces; lactose, 4½ level tablespoons; boiled water, 9 ounces. The additional 6 ounces of fluid necessary to meet its requirements can be given between feedings. The caloric values of this formula would be, milk 420 calories, sugar 180 calories, or 600 total calories, which if divided by 12 would average 50 calories per pound of body weight. In this manner, you can work out a satisfactory formula for any child, knowing its age and weight.

It has been said frequently that cows' milk is meant for the stomach of the calf. This is an old saying, but a very true one. We know that cows' milk is far more difficult for the infant to digest than is human milk. I think it has been shown quite conclusively that the difficulty of digestion is mainly a mechanical one and depends upon the size of the curd that is formed in the stomach. In order to make cows' milk more digestible, or, we should say, to reduce the size and tension of the curd in the stomach, a number of things can be done. Milk that is diluted with water, or cereal water, will have smaller and finer curds formed in the stomach. If milk is boiled actively for three to five minutes, the curd is softened and smaller. The addition of alkalies — 5% lime water, 1% soda-bicarbonate, or sodium citrate—will do the same thing. The addition of acids — U. S. P. lactic acid, 2 drops per ounce of milk; or citric acid in the form of orange juice, 1 teaspoon to each bottle feeding; or lemon juice, ½ teaspoon to each bottle feeding — does the same thing. It has seemed advisable to me in all cases, to have the milk boiled for three minutes. In a good many of the cases, dilution is necessary and in a few of them, the addition of acids advisable. If this plan is followed, very few of your normal cases will have any signs of indigestion and growth can be depended upon.

As previously stated, there are sufficient minerals in cows' milk, with the exception of iron, to meet all the needs of the infant. It has been generally believed that there is a small storehouse of iron in the liver and spleen of the young infant, sufficient to last for four or five months. After this time, some food containing iron or some inorganic iron should be given. The iron containing foods are egg yolk, and the green and yellow vegetables, both of which may be readily started at five months of age.

It has been shown time and time again that vitamins are most essential food substances. Sufficient vitamin "A" for the need of the average infant is contained in the cream of the milk that is used in the formula. A few infants require additional vitamin "B". This can be readily added by using some form of powdered yeast in one teaspoonful amounts daily. Vitamin "C," the antiscorbutic vitamin, can be supplied by giving orange juice. Let me suggest that you give orange juice at one month of age, giving one teaspoonful in an equal amount of warm boiled water, once a day. If there are no contraindications, this should be gradually increased so that by the time the child is three months of age it is getting 2 ounces of orange juice daily. Vitamin "D" may be supplied by giving cod liver oil, 1 to 3 teaspoons daily, or viosterol, beginning with 2 drops twice daily and increasing up to 10 drops twice daily. Vitamin "D" should be started at one month of age and continued during the first two years of life. It is to be remembered that all infants fed milk which has been exposed to heat by pasteurization, boiling, evaporation, or drying, should receive adequate amounts of orange juice. Vitamin "C" is readily destroyed by such exposure to heat.

The feeding of foods other than milk will vary with the individual case. As a general rule, however, you can readily start feeding certain cereals that have been cooked two hours, when the child is four months of age, giving from ½ to 2 tablespoons twice daily, feeding by spoon before the bottle. Strained vegetables, spinach, carrots, peas, green beans, asparagus tips, or combinations of these in the form of soups may be started when the child is five months of age, giving ½ to 2 tablespoons once daily before a bottle feeding. Egg yolk may be started at six months of age; fruit pulp at seven months; puddings at eight months of age. Zweibach and hard crusts may be started as soon as teeth appear. Crisp bacon, minced chicken, and scraped beefsteak may be started between ten and twelve months of age.

These foods other than milk should be fed by spoon and the child should be taught to feed himself as early as possible. It is well to remember that there are some children who will refuse a good portion of their bottle when these additional foods are added to the diet. Practical experience has taught us that after six months of age a child can very readily be given less milk. The amount varies from 16 ounces to 24 ounces per day. The additional milk required can be given in puddings and cereal.

As stated at the beginning of this talk, I am giving you a feeding schedule that applies to the normal infant, and I have not considered the abnormal conditions of vomitting, constipation, diarrhea, intolerance to milk, colic, slow growth, or any other digestive disturbance which might occur. I believe I can safely say that you can feed from 75% to 90% of all babies on this schedule and be quite confident of success.

THE ETIOLOGY AND TREATMENT OF ACNE VULGARIS*

Allen D. King, M. D.,
Wilmington, Del.

The subject of this paper is the etiology and treatment of acne vulgaris. This disease is a chronic inflammatory disorder involving chiefly the skin of the face, chest and back of young people. It assumes an important role in dermatology because of its prevalence, its resistance to treatment, and because it is scar producing. This latter fact should not be overlooked, for the unsightly blemishes and subsequent scars will influence to a considerable degree the future life of the individual, especially if a woman, and strong efforts should be made to secure an early cure.

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*Read before the Medical Society of Delaware. Wilmington, September 26, 1933.

A knowledge of the essential pathology of acne vulgaris is necessary for a clear conception of its etiology. The initial lesion is always the comedone, or blackhead, which is a waxy plug that develops in a hair follicle. This causes mechanical obstruction. Secondary infection develops behind the plug, with pus formation and tissue destruction. If two or more adjacent follicles become involved, pressure necrosis destroys the intervening walls, so that a single abscess cavity is formed. These subcutaneous pus-filled cavities are the main lesions in the nodular type of acne. The pustules either rupture externally or are slowly absorbed and in either case scar tissue remains, the degree of scarring depending on the size and duration of the pustule.

The immediate cause of the comedone is not known, but it is assumed to be the result of altered physical properties of the oil secreted by the sebaceous glands. Instead of remaining liquid, the secretion becomes semi-solid, and mixing with cast-off epidermal cells forms the waxy plug.

The majority of cases of acne vulgaris appear among adolescent individuals, that is during the second decade of life. This is the time when there is rapid growth of the body and development of secondary sex characteristics. The skin shares in this activity and the pilo-sebaceous glands assume an increased and often perverted function.

There appears to be a familial trend to this disease, not following the laws of true Mendelian inheritance but more after the fashion in which the tendency to freckle will stand out in certain families. This factor has been pointed out in a recent paper by Stokes and King in which it was shown that the incidence of acne vulgaris among the parents and siblings of individuals suffering from this disease was much greater than among the parents and siblings of normal control individuals.

A faulty diet is undoubtedly an important contributing cause in the development and perpetuation of this disorder. Many patients volunteer the information that over-eating, especially of carbohydrate foods, makes them worse. Clinical observation bears this out, and the carbohydrate intake of all individuals with acne vulgaris should be sharply curtailed.

The actual mechanism of development of acne lesions — the comedo-pustule-abscess-scar complex has already been discussed and need only be mentioned again to *emphasize* that the primary and fundamental lesion is the comedone and that either directly or indirectly all measures of treatment are aimed at its eradication.

There has been a large amount of investigative work upon the question of the acne bacillus. It is a plump, non-capsulated organism, which may be isolated from the depths of the acne pustules. Sabouroud believed that it causes the excessive seborrhea, while Unna and Gilchrist held that it caused the comedone and suppuration. Whitfield took an intermediate view, believing the excessive seborrhea to be an independent feature and that the acne bacillus, growing freely in the over-active pilo-sebaceous gland, set up a mechanical irritation and helped form the comedone plug, the abscess behind the comedone being due to the usual pus-forming organisms. Stickler, Kolmer and Schamberg in 1916 investigated the relationship of various organisms to the eruption of acne by means of complement fixation tests and were unable to link the acne bacillus to the disease by this method. Today, the majority of observers are inclined to relegate the acne bacillus to a role of secondary importance and place the comedone plug as the initial lesion.

There are several factors to be considered in the treatment of this disease. A broad, but nevertheless important item, is the general health of the patient. An adequate amount of sleep, a mild alkaline laxative, an increased vitamin intake are indicated. Sun bathing in summer and generalized exposures to the ultra-violet light rays in winter do much to promote the sense of well-being and improve the condition of the skin.

Many acne patients know from experience that over-eating, especially of carbohydrate foods, is attended with a flare up of their acne lesions. All acne vulgaris cases should be placed on a diet, preferably one with a strict, low carbohydrate intake. The average person does not know which foods are rich in carbohydrates and therefore it is well to give a written diet list with prohibited, restricted, and recommended foods. There is apt to be some loss in weight on such a diet; if the patient is over-weight the loss of a few pounds is desirable, if not accomplished too rapidly; if under-weight, loss can often be prevented by ordering double portions of milk fat.

The scalp is involved in nearly all cases of acne vulgaris, with over-activity of the sebaceous glands, a greasy yellowish scale, and scattered excoriated papules. A pomade containing 2-3% of sulphur, salicylic acid and 8-10% oil of cade applied to the scalp each night, and a shampoo twice weekly with tincture of green soap is useful in clearing up this region.

A host of local applications have been recommended by various dermatologists. The important ingredient in most of them is sulphur, and salicylic acid may be added if a mild keratolytic action is desired. Lotio alba, containing zinc sulphide in suspension, or an ointment containing 10% sulphur and 5% kaolin in unguentum zinc oxide are excellent preparations for daily application. If the skin is very oily, tincture of green soap may be used for washing the face, as well as for the shampoo. Grain alcohol (70%) containing a little boric acid is a useful astringent and may be used several times daily.

Once a week all papules and pustules should be drained and comedones expressed by means of an acne stylette. This is a small lancet-like instrument pointed at one end for incising the tip of the pustule or comedone and rounded at the other end, with a central aperture to be used for exerting pressure when forcing out the purulent contents or comedone plug. A comedone removed by this manner will not recur, if done properly, because the fine stylette point destroys the sebaceous gland in the depth of the follicle and prevents formation of new comedone material.

Vaccines have been employed for many years in the treatment of acne vulgaris, with varying degrees of success, but on the whole vaccine therapy has proven disappointing and fails to have the therapeutic efficiency earlier observers claimed for it. Many writers, including Morris and Dore and MacLeod have reported disappointing results from its use. Engman has had somewhat better results, and if vaccine therapy is attempted his technique should be followed, using a pure acne bacillus vaccine. Ormsby probably gives a clear judgment on the matter when he states that it is recommended as worthy of trial in selected cases.

X-ray therapy, through the development of a satisfactory technique for its application, has become the best treatment available for this malady. McKee of New York is an authority on the subject and full details are available in his text-book on x-ray and radium therapy. Briefly stated, fractional doses of x-ray should be applied at weekly intervals to the affected areas. Rarely is it necessary to approach the skin tolerance limit before the desired effect has been secured. Pusey has pointed out that the cumulative action of the x-rays causes a partial atrophy of the sebaceous glands, with an attendant decrease in their activity, so that the development of comedones is stopped. There is danger of permanent atrophy and telangiectasia if therapy is pushed too far or improperly given, and therefore one should be familiar with all the technical details of x-ray therapy and should be able to recognize the signs of approaching tolerance to the rays, namely, a persistent flushing and an unusual dryness of the skin in the exposed areas. The use of x-rays, combined with the mechanical removal of comedones, dietary measures, mild local applications, and eradication of the seborrhea capitis gives excellent results and suffices to cure the vast majority of all cases of acne vulgaris.

Discussion

Dr. Ira Burns (Wilmington): I wish to speak only in connection with the x-ray treatment of acne. Those of us engaged in x-ray work find it, as a rule for the usual type of acne, a very effective remedy, as Dr. King has stated, with certain modification of the diet. I found that one-fourth of an erythema dose given once a week for approximately sixteen doses can be well tolerated by the vast majority of patients. However, the cases of pustular acne seem to be most resistant to any type of radiation with which I am familiar.

Cancer Comment

MALIGNANT MELANOMA

MARION L. H. FREEMAN*
Wilmington, Del.

The term melanoma has been used to describe roughly any abnormal collection of melanin-containing cells.

In 1806 Laennec first described and named these lesions. In 1865 Paget called attention to the ability of moles to change into malignant growths. Virchow, in 1859 recognized both sarcomatous and carcinomatous structures in many malignant moles and employed the term malignant melanoma to describe the entire group.

There is considerable difference of opinion as to the origin of the melanin-producing nevus cells. Unna holds to the theory that they are of epithelial origin and classifies the malignant nevi with the carcinomas. Ribbert contends that they arise from the mesoblastic chromatophores and are thus in the sarcoma group, while Ewing feels that they are derived from and belong to the peripheral sensory nerve-end organs and therefore classifies them as neuro-sarcomas.

Histologically these tumors present a varied and frequently complicated picture, being composed of cells of all shapes and sizes usually containing melanin. In a rapidly growing melanoma the cells may outgrow their ability to produce melanin and give rise to a tumor which presents the same histologic picture excepting that there is an absence of pigment. These tumors have been termed nonmelanotic melanoma and are considered more malignant than the pigment producing type. Broders and McCarthy express the opinion that the cells of these so-called nonmelanotic melanoma, if given the opportunity to differentiate, would produce melanin.

Although malignant melanomas may occur in many situations the skin and the choroid of the eye are the most common sites for these tumors. There are cases described in the literature of apparently primary tumors arising in the meninges, ovary, epididymis, and gall bladder.

Malignant change in moles may occur at any age, but it is essentially a condition of middle age. Males are more prone to the tumors than females. Comparatively few cases have been reported in Negroes. The causative agent of the malignant change in pigmented nevi has been discussed from many angles, stress being laid on the part of slight trauma. Change in the appearance of a mole is usually the first symptom of malignancy, and frequently motivates the removal of the tumor. Increase in pigmentation usually occurs at the same time. Later, the tumor may become ulcerative and fungoid in nature. At this stage it is usually accompanied by multiple metastatic nodules.

The dangerous type of mole is slightly elevated, and has a thin smooth covering of epidermis. They are steel blue or blue black in color. If they are located in an area subject to trauma they should be excised with a margin of normal skin on all sides and deep enough to include the subcutaneous tissue.

Radium or roentgen rays are not suggested as a primary treatment for nevi which are undergoing change, for one cannot be sure without a biopsy and careful histologic study whether one is dealing with a true melanoma or a benign pigmented nevus. When a few discrete lymph nodes are discovered, early excision followed by massive doses of roentgen rays is the treatment of choice.

Metastasis occurs comparatively late in the disease and can often be controlled for several years by prompt irradiation of the new lesions when they are discovered.

When many regional nodes are involved in metastatic process the prognosis is extremely poor. Since excellent palliative results have been obtained by irradiation, this course of pursuit seems much more advisable than subjecting the patient to radical surgical procedure.

Early radical removal of any type of nevus subject to trauma is the only means of reducing the high mortality rate of malignant melanoma.

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*Secretary-technician of the Delaware Tumor Clinics.

EDITORIAL

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RE: BIRTH CONTROL

The fact that the senior Senator from Delaware is the sponsor of the Senate Bill to liberalize the laws relating to contraceptives gives this subject a peculiar interest at this time to the Delaware profession. The professional opinion in this State on this subject can be summarized as follows: We believe in the principle of birth control as a medical means toward a medical end; but we also believe that all clinics and instruction should remain solely under the direction of the licensed medical profession. With these tenets no one, we venture, can honestly quibble.

As to justifying our belief in the principle of birth control we might cite, among other items, the following:

Federal Laws, passed in 1873, class birth control with *obscenity*. This stigma should be removed from subject affecting public health.

Federal laws conflict with State laws. Doctors confused as to legal status of subject. Physicians fear giving contraceptive advice. Study and medical research hampered.

Physicians legally giving advice in their States are forced to "bootleg" their contraceptive supplies and scientific information. Federal laws forbid using U. S. mails or common carriers to obtain or send contraceptive information or supplies. Physicians may choose to violate Federal laws in private practice; but cannot do so in hospitals, dispensaries, etc., lest charters and endowments of such institutions be revoked. Consequently, poor women are unable to obtain this knowledge.

Commercial agencies masquerade under misleading names—exploiting needs of these women.

Federal laws make it illegal to send address of birth control clinics (legally operating under State laws) to overburdened mothers seeking help.

The medical organizations most familiar with this subject have gone on record in favor of amending these laws:

The American Gynecological Society (1925).

Section of Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association.

The Medical Women's National Association.

National Committee on Maternal Health, Inc.

Increased knowledge of contraception would mean reduction in number of criminal abortions. Over 15,000 women each year die from this cause alone.

Lastly: During this period of economic distress and unemployment, wives and mothers should be able to obtain through responsible medical channels, this form of constructive relief.

The Present Federal Birth Control Laws

1. Section 211 of the U. S. Penal Code.... Prohibits sending or receiving by or from the U. S. Mails information or supplies pertaining to the prevention of conception. *There are no exemptions.*
2. Section 245 of the U. S. Penal Code.... Also prohibits sending or receiving, by or from, an express company or other common carrier information or supplies pertaining to the prevention of conception. *There are no exemptions.*
3. Sections 311 and 312 affect the territories and districts of the U. S., and are even more rigid in their prohibition as they forbid even the possession of any article intended for the prevention of conception. *There are no exemptions.*

Violations of these laws are subject to $2,000 or $5,000 fine or imprisonment for five years; or both.

Senate Bill 1842 (introduced by Senator D. O. Hastings, of Delaware), and House Bill 5978 (introduced by Representative Walter Pierce, of Oregon), now pending in Congress, would amend the above sections by adding the following paragraph to each section:

"The provisions of this section shall not be construed to apply to any book or information relating to the prevention of conception, or article, instrument, substance, drug, medicine, or thing designed, adapted or intended for the prevention of conception, for use

(1) by any physician legally licensed to practice medicine in any State, Territory, or the District of Columbia, or by his direction or prescription;
(2) by any medical college legally chartered under the laws of any State, Territory, or the District of Columbia;
(3) by any druggist in filling any prescription of a licensed physician;
(4) by any hospital or clinic licensed in any State, Territory, or the District of Columbia."

These amendments seem to meet the arguments of the small but vociferous quota of physicians who conscientiously oppose birth control on moral grounds. Our personal opinion about the alleged moral dangers of making contraceptive knowledge and technique available to married people is that there is no danger. Nor is there any danger that the youth of the land—the lass and the lad—will, by the enactment of these Bills, be corrupted, for the simple reason that you can't tell a youngster what he already knows! When Mary openly walks into the drug store and purchases contraceptives, and when John, even more openly, buys his supply at the gas station, all this talk about aiding in the moral lapses of the people becomes a sounding brass and a tinkling cymbal. This is the time for sane consideration of this subject, and if it be viewed from all angles it is our opinion that Congress will be urged by a large majority of the profession at large to enact the pending Bills.

MOTHER'S DAY

Mother's Day—May 13th—is to be observed by women's clubs, men's clubs, medical societies, chambers of commerce, and other professional and civic groups who will join in community efforts throughout the nation to "Make Motherhood Safe for Mothers." This announcement is made by Mrs. Shepard Krech, President of the Maternity Center Association, New York City.

"An important step forward is to be taken this year," states Mrs. Krech. "In three previous Mother's Day Campaigns, the effort was to arouse the public to the importance of the fact that two-thirds of the maternity deaths are preventable; that 10,000 of the 16,000 women who annually die in childbirth could be saved. The next move, which is to be taken this year, is to do something quite specific and definite about it, with groups working in every community."

Mrs. Krech stated that specific changes cannot be made to improve conditions until people study their own local maternity facilities, and determine just what is needed. She indicated that the phases requiring attention may differ widely in various communities.

"Blank appraisal forms," added Mrs. Krech, "are available. By the use of these, any group of persons may conduct an investigation into the adequacy of what their own town or country is doing for mothers. Such questions as these are to be answered: 'Number of maternity beds?'—'Total number of births in the last year?'—'Number of deaths in the last year?'—'Is organized prenatal nursing service provided?'—'Is your hospital approved by the American College of Surgeons?'

"There has been a great deal of sentiment surrounding Mother's Day during the time that it has been observed in this country," said Mrs. Krech. "In the last few years there has been a successful effort to direct this fine feeling toward the important subject of saving mothers from unnecessary death. But emotion alone is not enough. We must have facts, pertinent facts, local facts, so that groups in every community may work with their own physicians, health officers, nursing associations and hospital authorities to alter those factors in the situation which are a barrier to safe motherhood."

Professional Relief

Relief has been asked for and provided for almost everyone in the body politic except the poor professional man, whose income has decreased sixty per cent and whose outgo has increased thirty per cent. We have seen and heard practically no demand for this relief, though we often encounter items that point to the dire necessity of it. The doctor is a long-suffering and patient animal whose back bends astoundingly before it breaks, and even then it will break before he complains audibly. Hence, there was no surprise when the first definite resolution from a professional body that has come to our notice, came from the lawyers. The doctors will do well to ponder this resolution, taken from an editorial in *Southwest Medicine* for March, 1934, as follows:

Whereas, the Government of the United States has been extending credit to many classes of the community which have been unable to secure loans or extensions in the ordinary course of business;

Whereas, no such aid has been extended to professional men;

Whereas, professional men, notably lawyers and doctors, must render service when required regardless of the ability of the client or patient to pay;

Whereas, most members of the legal and medical professions have rendered such service during the years of economic depression and now have upon their books charges for such service against clients and patients who are willing to pay but who are unable to secure funds, despite the ownership of property;

Whereas, this condition has resulted in placing said professional men in serious financial straits, in that they must pay in money for certain of their facilities and the support of their families while unable to collect sufficient sums in money from their debtors; and

Whereas, the debtors of the professional men, in the aggregate, consist of the most responsible portion of the community, whose credit in the aggregate is the foundation of all local credit;

Be It Resolved by The Lawyers Club of Los Angeles that the Congress and the President be importuned to act promptly for the relief of such professional men by setting up a system whereby the debtors of professional men, at least lawyers and doctors, may arrange long credit terms upon obligations that will be discounted at a low rate of interest by a Federal agency, thus releasing to the professional men amounts of cash in return for the credits which are now but frozen assets; and

Be It Further Resolved that copies of the resolution be dispatched to the California delegation in Congress, the President of the United States and that the committee take such other steps to foster the spirit of the resolution as it or the Board of Governors may be advised.

MISCELLANEOUS

Emergency Relief Commission

This communication is to advise you that effective March 26, and until further notice, no further relief in the form of medical care will be distributed by the Temporary Emergency Relief Commission.

This action is made necessary due to insufficient funds to meet all the necessities of life for relief clients. The relief funds appropriated by the State are so limited that the Commission can distribute only a restricted food allowance.

All outstanding bills should be presented at once.

Will you kindly advise the physicians accordingly?

Yours very truly.
W. D. SMITH. Executive Director.

Re: Illegitimacy

In reference to your request for information respecting the registrations of the births of illegitimate children, will you please be advised that legislation obtained from the State Legislature during its session in 1933 went far towards remedying a noteworthy defect in the Vital Statistics Law of the State. Previous to that time, there was no check provided under the law which prevented the name of the reputed father of an illegitimate child being placed upon the birth certificate. A number of instances had occurred in which after registration of paternity application was made at the office of the registrar for the substitution of a different name. Moreover, it is entirely possible that the Registration Department has at times issued a certified copy of a birth certificate indicating a certain paternity when such paternity could not be established or had not been established by any court proceeding. No latitude was permitted the State or Local Registrar to withhold a name, the paternal connection of which was doubtful.

The Act in question made two important provisions. In the first place, the name of a reputed father could be inserted on the birth certificate of an illegitimate child only if the written consent of this individual accepted paternity. In the second place, registrars were given the authority to withhold the name of the reputed father from a certified copy of the birth certificate of an illegitimate child if there was not attached to the certificate a statement of the reputed father acknowledging paternity.

Yours sincerely,
A. C. JOST, M. D.,
State Registrar.

New Hawley Table

The man who twenty years ago invented the world's first orthopedic and fracture table, and whose work has since won him renown throughout the civilized world, has now made an even greater contribution to his fellow-man—and he has done it while bedridden at Glockner Sanatorium in Colorado Springs, Colorado.

He is Dr. George W. Hawley, of Bridgeport, Conn., who has been decorated by foreign countries and is regarded as one of the world's authorities on fractures. He has been a member of the "fracture committee" of the American College of Surgeons ever since it was created. During the World War he was in charge of America's only bone and joint hospital in France.

Three years ago tuberculosis undermined Dr. Hawley's health and he was sent to Glockner Sanatorium, which is at the base of Pike's Peak. Unable to carry on his practice, he converted his hospital room into a makeshift laboratory and from his bed directed experiments. Engineers traveled across the continent to confer with him in bringing out a new fracture table that combines the x-ray and fluoroscope with it for the first time in medical history.

The table is not yet in general use but it is installed in some of the leading hospitals in India, Belgium, Philadelphia, New York City, Atlanta, Ga.; Sharon, Pa.; Washington, D. C., Milwaukee, Wisc.; Toledo, O.; Waukesha, Wisc.; Elmira, N. Y.; Ogden, Utah, and Glockner Hospital in Colorado Springs, where the original was perfected.

Guesswork in setting fractured bones has been entirely eliminated through the new table, which permits the surgeon to watch and guide the fracture ends during reduction, through the fluoroscope. He is not compelled to manipulate and attempt reduction blindly and then take radiographs to learn whether the operation is complete or a failure. In the past treatment of fractures required the help of many hands, extravagant of costly dressings and in instances the job had to be done over.

Formerly the patient was subjected to much pain and handling by being moved from the fracture table to the x-ray table. With the new combination table and x-ray the surgeon may take radiographs of any type of fracture at any time during the operation, regardless of the position of the patient. This is possible because of the design of the apparatus and the mobile, shock-proof x-ray unit. There is no danger to the patient nor the surgeon from possible shock. The table is of steel with top sections of plywood covered with bakelite, permitting free passage of the x-ray and eliminating graining of radiographs.

Doctors say the new table not only revolutionizes and simplifies handling of fracture cases, but is a more humane and more economical apparatus and procedure.

Dr. Hawley's table that was brought out twenty years ago is now in the Smithsonian Institute, Washington, D. C.

While Dr. Hawley has been at work on the new table he has been cured—seemingly a reward for his effort. He has recently been released from the Colorado Springs hospital.

Venereal Disease Information

For a number of years the U. S. Public Health Service has been publishing, for the information of physicians, health officers, and others, a monthly abstract journal known as "Venereal Disease Information." This publication contains usually one original article on a subject of general interest in connection with the venereal diseases and numerous abstracts from the current literature pertaining to these diseases. In the preparation of this abstract journal more than 350 of the leading medical journals of the world are reviewed, and abstracts made of the articles on this subject.

The cost of "Venereal Disease Information" is only fifty cents per annum, payable in advance to the Superintendent of Documents, Government Printing Office, Washington, D. C. It is desired to remind the reader that this nominal charge represents only a very small portion of the total expense of preparation, the journal being a contribution of the Public Health Service in its program with state and local health departments directed against the venereal diseases.

TRUTH ABOUT MEDICINES

Vinyl Ether.—The Council on Pharmacy and Chemistry reports that vinyl ether (divinyl ether, divinyl oxide) is a preparation of Merck & Company, Inc., originally proposed by Leake and Chen for use in inhalation anesthesia in place of ethyl ether. Vinyl ether, as prepared for anesthesia, is said to contain 0.01 per cent phenyl-alpha-naphthylamine to prevent polymerization and decomposition, and 3.5 per cent absolutel ethyl alcohol to prevent freezing on evaporation. This product is not yet marketed for general use and is prepared at present only for investigative work. The advantages claimed for vinyl ether over ethyl ether are that it is less irritating to mucous membrane; that induction of anesthesia is much more rapid and recovery more prompt; that it has a somewhat higher partition coefficient than ethyl ether; that the minimum anesthetic concentration is much lower; that the minimum blood concentration of vinyl ether necessary for anesthesia is about one-fourth that of ethyl ether; that vinyl ether offers a greater margin of safety. In the clinical trials induction was said to be exceedingly rapid and recovery correspondingly prompt, the latter occurring frequently in from thirty seconds to one minute. Satisfactory surgical relaxation is stated to obtain and anesthesia has been maintained for varying periods up to nearly three hours. The Council decided to defer further consideration of Vinyl Ether for Anesthesia pending accumulation of additional evidence as to the therapeutic usefulness of this product and until the manufacturer markets vinyl ether for general use; at that time the preparation will also be examined by the A. M. A. Chemical Laboratory. (Jour. A. M. A., January 6, 1934, p. 44.)

Welch's Certified-Pure Pasteurized Grape Juice Not Acceptable.—The Committee on Foods reports that the Welch Grape Juice Company of Westfield, N. Y., submitted a bottle of pasteurized grape juice, slightly sweetened with sucrose, called Welch's Certified-Pure Pasteurized Grape Juice. The advertising announced this grape juice as a discovery of modern science for weight reduction and burning up of fat. This grape juice is no more effective for reducing weight than are many other common foods, nor does it "burn up fat." It has no value for building muscle or bone as claimed; it will not revive lost appetites, nor is it important for contributing vitamin B for normal appetite. It is essentially a pleasingly flavored sugar solution, ranking with water for "facilitating elimination of waste products, aiding digestion, absorption, and reducing food putrefaction." The advertising is manifestly an artfully designed piece of deception to enmesh the credulous and those uninformed in nutrition and physiology. It is a revival of the blatant "patent medicine" and nostrum blurbs of the past. The company, when informed of the Committee's opinion, has not expressed willingness to change the advertising. This brand of grape juice, therefore, cannot be listed among the Committee's accepted foods. (Jour-A. M. A., January 27, 1934, p. 292.)

Pertussis Vaccine.—All vaccines of B. pertussis were omitted from New and Nonofficial Remedies in 1931 because no conclusive evidence had been accumulated regarding the therapeutic or prophylactic efficacy of such preparations. The recent work of Dr. Louis W. Sauer (The Journal, Jan. 28, 1933, p. 239, and Nov. 4, 1933, p. 1449) has aroused renewed interest in the subject. Sauer states that preparations made according to his technic are valuable immunizing agents against whooping cough. Eli Lilly & Co. is now manufacturing pertussis vaccine according to the Sauer method. Sauer has presented 394 cases of apparent immunity (beginning three months after inoculation and extending to, and possibly beyond, four years following inoculation) to whooping cough under circumstances ordinarily considered conducive to the spread of the disease. Although Sauer's work appears promising, it is pointed out that the present series of cases is quite limited; the work has been carried on in one locality (where, conceivably, the vaccines used may all have been of the same strain as the current infections), and the past results have been directly contradictory. In view of this the Council does not feel justified, at this time, in recognizing the use of pertussis vaccine of any sort for therapy or prophylaxis until more convincing evidence becomes available. The Council, therefore, postponed consideration of B. pertussis vaccine, Lilly (Sauer method) to await the development of further evidence. (Jour. A. M. A., March 3, 1934, p. 692.)

Gastric Mucin.—The Council on Pharmacy and Chemistry reports that the use of gastric mucin in the treatment of peptic ulcer was introduced by S. J. Fogelson of Northwestern University, following the work of Ivy and Oyama and of Lim on gastric secretion. Gastric mucin has been presented for the consideration of the Council by Armour and Company, Frederick Stearns & Company, and the Wilson Laboratories. Gastric mucin has been the subject of a number of investigations, both on animals and on patients. The Northwestern group prevailed on commercial houses to prepare a satisfactory product and established a method of controlling the purity and checking the physiologic activity. They next arranged to have a number of competent gastro-enterologists try the effects on a large group of patients with peptic ulcer. All these clinicians were enthusiastic about mucin but were fairly conservative, admitting a certain percentage of failures. They recognized the fact that the large majority of patients with peptic ulcer may improve on any one of several methods of treatment and that spontaneous remissions may occur. When a new therapeutic method for peptic ulcer is introduced, numerous reports soon appear from practitioners who have failed to obtain satisfactory results. A review of the recent literature shows this to be the case with gastric mucin. It appears that, although the early studies indicated beneficial results in a fairly large number of patients with peptic ulcer that had failed to respond to other methods of treatment, later publications have emphasized that there are limitations to this form of therapy. Gastric mucin is a viscid, unpalatable preparation and many patients refuse to continue treatment; nevertheless, the product appears to be of value in a number of patients that have not done well on usual ulcer therapy. The Council therefore decided to postpone further consideration of gastric mucin pending the accumulation of additional evidence as to the therapeutic usefulness of this substance. (Jour. A. M. A., March 10, 1934, p. 767.)

Pulvules Amytal Compound (Lilly) Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that recently it declared that it was prepared to consider with the view of inclusion in New and Nonofficial Remedies mixtures containing barbital (or barbital derivative) and amidopyrine, under the descriptive name "Tablets (name of barbital derivative) — Amidopyrine." When informed of the Council's decision, Eli Lilly Co. stated that it markets a compound of amytal and amidopyrine under the name "Pulvules Amytal Compound" and asked the Council to consider the acceptability of the name "Pulvules Amytal and Amidopyrine

Compound" for this product. It was pointed out to the firm that this designation is contrary to the terminology adopted by the Council. As all familiar with pharmacy know, the use of the word "compound" in a title implies the presence of other constituents than those named in the title. After some correspondence the firm informed the Council of its conclusion that the future of the product would be jeopardized if the name were changed. The Council therefore declared "Pulvules Amytal Compound" unacceptable for New and Nonofficial Remedies because the product is marketed under a name that is uninformative of the composition of the product. (Jour. A. M. A., March 17, 1934, p. 842.)

Cysteine Hydrochloride. — Following the studies of F. Gowland Hopkins on the stimulating effect of glutathione on cell growth and his demonstration of the role of the contained sulphydryl radical in intrinsic cellular oxidative metabolism, Reimann employed thiocresol, which also contains an -SH group, in the treatment of indolent leg ulcers. Good results were reported although thiocresol presented certain disadvantages such as undue irritation and unpleasant odor. Insulin also presents a similar sulphur-hydrogen linkage and has been proved effective. Recently Brunsting and Simonsen (The Journal, December 16, 1933, p. 1937) reported good results in nonspecific ulcers, but little effect on those of specific etiology, with the use of cysteine hydrochloride. It will be remembered that glutathione represents a conjugation of cysteine with glutamic acid. Studies by Voegtlin and Thompson, Voegtlin and Chalkley, and by Lecloux demonstrate (1) that glutathione (by reason of the contained -SH radical) has a particular stimulating effect on nuclear multiplication, and (2) that active tumor tissue contains more glutathione than its normal counterpart. In the light of these studies it is apparent that neither cysteine hydrochloride, nor any other sulphydryl containing substance should be employed on superficial ulcerations when the possibility of malignancy cannot be absolutely excluded. The drug appears to offer, under appropriate conditions, a good bit of promise in the treatment of chronic, unhealthy, indolent, ischemic ulcers of non-specific origin. (Jour. A. M. A., March 24, 1934, p. 929)

Oleothesin Not Acceptable for N. N. R.— The Council on Pharmacy and Chemistry reports that Oleothesin is manufactured by the Oleothesin Company of Buffalo, N. Y., and patented in the name of Oscar Hayen Stover of Buffalo. While the advertisements are noninformative regarding compositoin, they are not reticent concerning the alleged therapeutic attributes of the product. In fact, this broad, all-inclusive claim is made: "safe, certain surface anesthesia." Inquiry was made of the manufacturer whether or not the product was of secret composition. The reply denied secrecy and set forth the following formula: Procaine base, 17.2%; alcohol 2%; olive oil, lanolin, 76.7%; cresol, 0.1%; flavors. This is a formula the prescription for which might have been written on any suitable occasion by any practitioner from Maine to California. However, on May 2, 1933, a patent was issued and so the mixture became an original, protected invention. The product clearly represents another attempt to push a mixture of a thoroughly investigated, familiar and time-honored drug as something new, original and epoch making. The Council declared Oleothesin not acceptable for New and Nonofficial Remedies because it is an unoriginal mixture of well known substances marketed under a misleading, suggestive trade name with no statement of its composition, and under therapeutic claims that are too inclusive, exaggerated and unwarranted. (Jour. A. M. A., March 31, 1934, p. 1003)

Jad Salts—"Jad Salts" is a good example of the way in which, to suit the exigencies of trade, nostrum-makers either change the composition of their products or change the alleged therapeutic virtues—or both. The Bureau of Investigation reports that for many years Jad Salts was advertised as a cure for kidney disease, and three times the product was declared misbranded under the National Food and Drugs Act because of the false and fraudulent claims made for it. This was in 1923. The government chemists reported at the time that analysis showed Jad Salts to consist essentially of a mixture of sodium phosphate, baking soda, citric and tartaric acids, with traces of lithium carbonate, potassium bicorbonate and hexomethylenamine. Somewhere around 1930 the entire advertising appeal was changed and Jad Salts then began to be advertised to the obese. While the advertising, in screaming headlines and pictures, puts over the idea that Jad Salts is a reducing remedy, the same copy, *sotto voce*, declares that it is the dieting and not the "patent medicine" that brings about any reduction that may occur! Comparing the old with the new we find that the only alleged difference between the Jad Salts of today sold for obesity and the Jad Salts sold a few years ago for "kidney trouble" is that the trace of hexamethylenamine that they used to have in it has been dropped, as has also the baking soda. Still more recently the Jad Salts concern has put out a product that it called "Condensed Jad Salts." It seems evident that the regular Jad Salts, while a saline laxative, is an extremely mild one. The Condensed Jad Salts, by the addition of Glauber's Salt, is presumably more drastic. One may assume that if the requirements of the "patent medicine" business call for further changes, we may find Jad Salts undergoing further transfiguration both in composition and in therapeutic claims and find it advertised for pathologic states not yet thought of. (Jour. A. M. A., March 31, 1934, p. 1101)

Adenomatosis Coli and Carcinoma of the Colon: Report of Case Illustrating Multicentric Malignancy

JOSEPH FELSEN and JOSEPH J. WELLS, New York (*Journal A. M. A.*, March 3, 1934), point out certain pertinent observations relative to the development of multiple primary malignant tumors of the large intestine on the basis of adenomatous polyps. They make no attempt to dispute the validity of Billroth's strict criteria with regard to multiple primary malignant tumors. It appears to be quite generally conceded that the simultaneous and independent development of carcinomas from two or more adenomatous polyps of the colon or rectum does occur. The case that they cite is particularly instructive in that a benign adenomatous polyp and two stages in the development of a malignant growth from such a polyp are quite clearly shown. Accumulated data point to an underlying tendency to neoplasia in adenomatosis coli. Because of the high incidence of malignant degeneration in adenomatous polyps, their removal at an early stage is important. When removal is impossible because of their number, careful periodic examinations by means of the contrast enema and sigmoidoscope are indicated. When malignant conditions supervene, local resection results in a high proportion of cures.

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STERILIZATION AS A NATIONAL PROBLEM

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Eugenics, a subject of much interest to scientists for many years, has only had its mass of knowledge put to practical use but recently in the United States, where attempts have been made to discontinue reproduction of the cacogenic stock. Even now it is not a national procedure but an obligation which the individual States have assumed, resulting in a lack of uniformity of the laws. To Germany must be given the credit of being the first country which has realized the importance of a general eugenic law. Although at present it has received rather unpleasant notoriety, it is a step forward in an attempt to improve the race and will undoubtedly be accepted as such after the first excitement has subsided. Ancient Sparta recognized the necessity of a strong race of men, and, although probably knowing nothing of eugenics, she still practiced it in a crude way. Shortly after birth a child was brought before elders who decided if it should be reared. If it was found to be a defective or a weakling it was exposed and allowed to die. As a nation she scorned pampering the unfit. Since physical and mental development in most cases parallel each other, the nation in this manner, unknowingly it is probably true, tended to limit the mentally unfit. In no country were the rights of the individual so subjugated to the rights of the nation. In the 13th century a traveller in Palestine reports that thieves were castrated in order that they might not produce sons who would become criminals. Johann Peter Frank, a German physician, in 1779 advocated the castration of feebleminded. in order that reproduction might be prevented.

In the middle nineties the operation of vasectomy was performed in an Indiana institution by a far-seeing physician who felt that it would be far better that these unfit should never be born rather than that they should be allowed to enter this world to live a life which is often a burden to themselves as well as to others in the community who must eventually care for them. Although the problem is a national one only in Germany, it would seem that it fundamentally belongs here rather than in the individual units of a government. As long as free intercourse continues between the states of a government, sterilization laws enacted by certain states will not be as effective because of a differing situation in a neighboring state.

Although at various times the constitutionality of such a law as a sterilization law has been questioned on the grounds that it would interfere with the rights of the individual and would definitely be a type of class legislation, it has now been established that laws can be written which in no way interfere with the constitutional rights of the individual. The first law was drafted in Michigan in 1897, but failed to pass by a few votes. A law was passed in Indiana in 1907, other states rapidly following, with Delaware as the twentieth. In twelve cases the constitutionality of such an act was passed on by the courts, five declaring that such an act was constitutional, with seven deciding against it. Later four states redrafted laws which then were found to be entirely constitutional. The Virginia law was tried before the United States Supreme Court, and on November 12, 1925, Chief Justice Holmes declared in favor of it. In his sustaining statement he made the following remarks: "We have seen more than once that the public welfare may call upon the best citizens for their lives. It would be strange if it could not call upon those who already sap the strength of the state for these lesser sacrifices, often not felt to be such by those concerned, in order to prevent our being swamped with incompetence. It is better for all the world, if instead of waiting to execute degenerate offspring for crime, or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind. The principle that sustains compulsory vaccination is broad enough to cover the cutting of the Fallopian tubes. Three generations of imbeciles are enough." Since this decision, which so definitely favored the enactment of sterilization laws there has been but little question as to the legal standing of such acts.

Sterilization is an attempt to improve the eugenic status of the human race by preventing reproduction of the dysgenic stock. It is, in fact, negative eugenics. The word "eugenics" was coined by Sir Francis Galton in 1885, being derived from the Greek word meaning well born. By eugenics is meant "the science which deals with the influences that improve the inborn or native qualities of a race or breed, especially, of the human race." At the present time, to the population in general, it is apt to connote the prevention of the propagation of the unfit rather than an improvement of the native qualities, that is, it is rather negative eugenics than positive. With increased knowledge of the possibility of heredity, the public became interested in cleansing the world of the unfit, and tended to neglect that side which dealt with the actual improvement of the members of the fit. Positive eugenics would deal with producing an increase of that portion of the population which is best fitted to cope with life and the social order of things. At the present time it is rather definitely conceded that to maintain the present population each couple must produce an average of a little over three children. Approximately 10 per cent of the population is unfit to reproduce because of eugenical reasons, since they belong to such classes as mentally defectives, inherent criminals, chronic paupers, or are of such which carry diseases, either physical or mental, which are definitely proved to be inherited by the offspring. If this 10 per cent is not allowed to reproduce, the other 90 per cent must necessarily produce more in order that the deficiency might be overcome. If the entire cacogenic stock were prevented from reproducing in one generation, the number of eugenically unfit in the next generation would be reduced by approximately 15 per cent since the dysgenic characteristics are mostly recessive in type and many apparently normal people carry that taint, which under proper conditions, emerges in the next generation. For this reason it becomes imperative that those who come from good eugenic stock should increase markedly their offspring, while those who come from a stock which carries a dysgenic taint should decrease theirs. For several reasons the higher intellectual does not reproduce to as great an extent as the low. Among the lower level the years of highest income occurs early in life and lack of material means does not prevent an early marriage. On the other hand those of the highest intellectual type obtain their greatest income much later in life, since more years are spent preparing the individual for his profession, with a resulting delay in marriage and a lessened chance for large families. In the under social strata, each child, as he obtains a certain age, is an asset to the welfare of the family, since he early adds to its support, a situation which rarely occurs at the opposite strata under ordinary national economic situations. Moreover, the higher the standard of the family the more expense is involved in the raising and in the educating of each child, if he is to remain in his own social group. The average number of children of the married male alumni graduating from a certain State University was only two and a fraction, less than the number required to keep the race stationary. The average number of children per woman in a definite number of defectives was found to be six and a fraction. So we find that there is a great preponderance among the defectives, not among those of presumably higher intelligence. Birth control has been, until very recently, available more freely to those of the upper classes than the lower. It is, moreover, very doubtful if the mental defective would have either enough intelligence or the temperament to successfully carry out contraception. The question is not so much of the ability to procreate as it is one of control of the number of offspring; it has been thought by some that the feeble-minded were more fertile and for this simple reason had greatly increased families. On the contrary, investigation seems to prove that the dysgenic type are less fertile. This seems to be upheld by the fact that uncontrolled reproduction averages only six and a fraction children per family, much fewer than the physically normal woman should produce during the sexually active period of her life.

It is true that infant mortality is much greater in the lower strata of society, but it does not nearly compensate for the four more children per family which they produce. According to studies which were published in 1928 four to five of their children survived to the age of sixteen or over, namely reaching the child-bearing age. To increase the number of fit to replace the number not allowed to be born would then require education and the promotion of a feeling of public duty. Increased taxation on childless couples or decreasing the taxation with each child might tend to increase the numbers. Yet it is doubtful if the decrease in taxation could compensate for the increased cost of maintaining a child in the proper environment, but since the minority of men, upon which the statistics were based, were college graduates, it would follow that the group making up the skilled mechanics or similar occupations would be the ones who might be compensated by reduction in taxation. The living standards and educational requirements are not as severe as in the professional class and seldom not beyond those furnished by the state. Of the highest level it is psychologically doubtful if a decrease in taxation would have any effect, education early in life being the only method of obtaining the desired result. Yet it is also doubtful if the highest intellectuals are those best qualified by nature to cope with life in its present state. It is probably those of average intellectual ability and of strong physical stock who are the most desirable citizens and who are the ones among which the positive eugenics is most desirable.

In considering the types of people which should be affected by sterilization laws it is generally conceded that the feebleminded produce the largest problem. Dr. Goddard from his statistics estimates that 65 per cent of all feebleminded children come from feebleminded parents, the other 35 per cent being traumatic or idiopathic in type. He also computes that at least 80 per cent of the children of the feebleminded are feebleminded, the other 20 per cent being of normal intelligence but of a low type and of being able to carry the taint into the next generation. Unfortunately defectives usually marry defectives and in these cases the children are almost 100 per cent mentally defective. An intelligent child with an assumed defective father and a defective mother immediately leads one to suspect the paternity of that child. It is true that mental deficiency to a certain extent seems to be self-limiting, in that as the intelligence becomes lower the ability to procreate and reproduce its kind becomes less. However, it is a recessive characteristic, and if a defective woman married a normal man, as does occur, all children will possibly be normal, but the defective taint in these children with proper mating will produce an abundance of defective offspring in a distant generation. Although the inheritance of defectiveness follows closely and is of a recessive Mendelian type, it does not seem to be entirely characteristic. This is possibly due to the fact, as explained by Davenport, that mental defectiveness is not based on one intellectual trait; namely, one individual may be defective because of severe defect in judgment while another may be defective because of an equally severe defect in some other part of the intellectual field. A mating of two individuals who are defective in different spheres would naturally result in a child who might obtain the best from each parent, thus neutralizing the defective strain in that individual, although this child continues to carry the taint. No one today, however, would attempt to deny that feeblemindedness is for the most part inherited, and definitely runs in families. A study of the population of the institutions for the defectives repeatedly shows the presence of relatives. The few normal children which might result would never compensate for the preponderance of defectives which would be bound to result.

When we consider other mental diseases the proof of inheritance is not so readily demonstrated. Among the psychotics the history of insanity is often quite marked in the direct family of the patient, as well as in collateral branches. Again, no one is ready to deny that the tendency of many of the psychoses is transmitted to the offspring, although the actual onset of the disease might be delayed by environmental precautions. Schizophrenia shows in childhood, before the onset of the active disease, certain, inherent peculiarities, which have not been successfully combatted as yet. Several authorities have investigated the condition and feel that it is transmitted by a simple Mendelian recessive. Since many of these people are permanently institutionalized before bearing children, studies of cases taken from hospitals do not show as characteristic a picture as that shown by the defectives who more frequently remain in the community.

Epilepsy, because it may be acquired in many of its forms, gives the investigator considerable confusion. True, a definite history of epilepsy can be obtained in the family history of many patients, and some investigators feel that there is one type which follows a recessive Mendelian transmission.

Manic depressive psychosis is thought to be a dominant characteristic by some investigators. Although a definite taint seems to be present in many families, yet the actual onset of the acute disease seems to be undoubtedly affected in many cases by the environment.

Whether those with certain physical diseases should be allowed to propagate is an important question, but one which hardly comes within my scope.

The arguments for prevention of reproduction are based on economic and race betterment factors. Sentiment plays a very minor part, except in such cases where the mother's physical health is of such a nature that childbearing is of great agony and danger.

Opposed scientifically to the eugenists are the environmentalists who maintain a much more optimistic viewpoint about the possibilities of the dysgenic type. They feel that by improving the environment of the children of those who are mentally defective or diseased, desirable citizens will result. They are unable to explain why children brought up in orphanages, undoubtedly living in the same environment, show such a wide range of personality and mental traits. Any child protective organization can present innumerable cases in which a given child of defective heritage has been placed in home after home in an attempt to produce a socially fit individual, with the eventual step being placement in an institution. Dr. Campbell tells how a single child-placing organization in New York, after placing a rather large number of children of criminals in a country community offering a fairly ideal environment, found that the majority developed such unfavorable behaviour traits, that it became almost impossible to persuade anyone in this community to accept more children.

It is true that the environment does play an important role in the development of the individual. It is entirely possible that the intelligence of the subject may be influenced by 10 or 15 per cent by an adverse environment, but this would never make a normal person from a low mentally defective one. It is also true that urban life produces more insanity than rural, due to increased emotional stress. Yet the personality trait must be present if a psychosis is to be developed under an adverse environment.

Sentimentalists claim that a genius may be destroyed and that many very superior people eventually develop insanity. In studying the lives of those people who show most marked ability we find that the incidence of insanity is about 4 per cent, or the same average as that of the population in general. They also claim that it is inhumane treatment to deprive a woman of the right to bear children. We can only say that in a social order the right of the individual must give way to those of the group where the question of destruction or salvation of the society is involved.

To prevent a gradual national decadence with a resulting inferior stock, it is necessary that the degenerate and the inherently diseased be not allowed to reproduce. This can be done by three methods; viz:

1. Restrictive marriage laws.
2. Sequestration.
3. Asexualization, or sterilization.

Let us consider each of these three methods individually. Restrictive marriage laws have been tried in some states, only to later fall into disuse. These are rather obviously bound to fail because of the following reasons. As long as state laws regarding marriage vary and as long as all states do not have them, and as long as an individual can travel from one state to another to be married so readily, it would be impossible to prevent even the most obviously unfit people from obtaining a marriage certificate and having the marriage performed merely by entering a neighboring state. Some states do not even require any length of residence before issuing a certificate, making the problem even more simple. Even if the home state should not recognize the marriage and would attempt to prevent these people from returning, there is nothing to prohibit the offspring from migrating. Whether these people propagate in one state or in another is of no importance—their children are potential dependents and because of this fact they should not propagate anywhere. A further difficulty which arises in attempting to enforce this marriage law satisfactorily would be aroused in attempting to determine who was to decide whether these people were fit to bear children or not. Many of the higher types of defectives are endowed with a superficial brilliance so that even a psychiatrist or psychologist will hesitate in pronouncing them defective without detailed study and observation. The average magistrate or license clerk is unable to recognize that these people are subnormal and to determine whether a certificate should be issued or not. The situation, true particularly of defective women where inherent intelligence or lack of such does not seem to be as obvious as in men, would make it inevitable that marriage would occur were the decision left with the untrained man. A further problem arises which the marriage laws do not cover, in that illegitimacy persists and there seems to be no law that could or would be adequate enough to prevent this. Unfortunately, illegitimacy occurs more frequently among the defectives than it does among the normal women in that a defective is very suggestible, has no social or logical reasoning, and is often the prey of unscrupulous people who, realizing this condition, do not hesitate to take advantage of them. At the present time there seems to be no adequate suggestion offered as to how this difficulty could be rectified by prohibitive legislation.

Now let us consider the second possibility. Segregation, if carried on during the period of reproduction and if carefully supervised, would prevent propagation. It is conservatively estimated that there are over a million defective people of child-bearing age in the United States, with an annual cost of segregation of $280,000,000. With the average life of an individual in an institution being approximately 10 years, we would find that, attempting to segregate these people, a general cost to the public would amount to more than $28,000,000,000, a tremendous burden on the taxpayer of the country. Moreover, a certain percentage of these people would be self-supporting and adding so much to the community were they at large. From a purely economic reason it would seem that segregation were a rather expensive procedure. From a humanitarian standpoint, particularly with the higher type of defectives who would naturally irk at the limitation of their freedom, segregation is far from being the kindest method to prevent propagation. These individuals, if prevented mechanically from bearing more children, could live in the community and join the ordinary privileges of any individuals. True, a certain percentage, because of their extreme suggestibility and inability to understand the laws of the country, would eventually be placed in other institutions because of their anti-social behaviour. There is a certain percentage of these defectives who are entirely law-abiding and who are to a certain extent a valuable asset in the community, as they are useful in doing a certain amount of simple labor. It is indeed true that a certain percentage of defectives would always be of use to the society in doing the type of work which the man of average intelligence scorns. Many institutions can show that patients which have been sterilized have been sent on parole, whence they marry and make an adjustment which is entirely satisfactory. Without children they are well able to work out their own problem in supporting themselves, but given several children, not only will the state have more defectives to care for in the future, but they would be burdened with a dependent family as well.

Now let us consider the third method of control. There are three reasons why asexualization or sterilization may be done:

1. To prevent propagation.
2. To allow the discharge of inmates, thus lessening the cost of upkeep.
3. To increase the happiness of inmates by giving them more liberty.

The first reason, to prevent propagation, is the main reason why we sterilize this type of people. Sterilization of these defectives should not be carried on promiscuously, and no one is desirous that this should be done. It is not necessary to sterilize all defectives, as there is a small percentage in which it is impossible to hand on the defective trait to their children. Moreover, there is a certain small percentage who are inherently sterile due to the nature of their condition, but yet with careful study of the families of defectives it can usually very readily be determined how important a part heredity has played in the life of the subject. Given two or three generations of defectives in a family, it does not seem vaguely possible that the fourth generation will improve unless they have married a rather high type of individual, a condition which is unexpected, since defectives marry those people which are near their own social strata and who have approximately the same mental ability which they themselves possess. Because of this fact the chance for defective children is greatly increased. This does not hold true for the mental diseases, and is probably why we cannot as definitely determine the amount which heredity plays in the production of such diseases.

The second reason for sterilization leaves no argument. If we can discharge inmates of our institutions because it is no longer possible for them to bear children, it is readily understandable that the maintenance of such institutions would be lessened, but if these people were discharged without such a procedure and allowed to multiply, the next generation would find increase in the population because of the offspring of that individual who was again allowed into the community.

The third reason, the allowing of happiness by giving the individual more liberty, probably applies further in state hospitals than to other institutions. A certain percentage of the patients would necessarily have to be kept under very close supervision during the child-bearing age, not being allowed the freedom which an institution could give them were there not the ever-dangerous possibility of a pregnancy. Removal of this danger allows the mild psychotic, who may have very little hope of recovery or a complete discharge from the institution, to enjoy parole privileges which would necessarily have to be denied before such a procedure.

In considering the operation of sterilization we must realize that the procedure is very simple. Although in former times castrations were carried out which involved the removal of the glandular substance and a slightly more serious procedure, in late years vasectomy has been the only type of operation used extensively, on men. The operation was first attempted by Dr. E. Steinack, who used it as a rejuvenation operation on the grounds that from experimenting on lower animals he concluded that the shutting off of the cord increased production of the hormone itself. This ordinary form of Steinack rejuvenation operation is exactly the same procedure which has been used on the several thousands of people who have been operated on in California and other states. In the case of a woman, salpingectomy is the usual procedure. Another method which has been used is X-ray. X-ray, because its effects are not positive and also because if an early unrecognized pregnancy is present, results in a deformed child, has made the procedure a rather questionable one to follow. We do not say that the operation is infallible. In California, where there is probably the greatest number of cases who have been operated on and followed, we find that failure has been known to occur only 4 times in 2,500 cases of women. In a collection of cases during half a century, from all countries from which information could be obtained, failure has been said to be 6 or 7 per cent, the pregnancy usually occurring within 6 months or a year after operation on the woman. In case of vasectomy, there were three cases of pregnancy that occurred in the wife from some 3,500 operations. These cases are rather carefully checked to eliminate the possibility of all extra-marital relations. The effect of the operation seems to be an improvement, probably in the psychic field rather than in the physical. As a method of rejuvenation it would seem that the patient who submits to the operation for this purpose receives exactly what he believes he will, often co-incident with the amount which he pays. Among the patients who are operated on for eugenic or therapeutic reasons, we find very little history of rejuvenation. For the most part, in following up the numerous California and our own patients, we find there has been no change in their emotional life in one way or the other. This is particularly true in the case of the men, the women being more inclined to state that they have seen an improvement in their emotional life following the procedure. This is, however, due more to the relief of strain brought out by the fear of pregnancy than to any actual physical effects of the operation itself.

An objection has been raised against sterilization, some claiming that if the fear of pregnancy were removed from the minds of defectives there would be increase in immorality and promiscuity, with an increased spread of venereal disease. On first thought it might be felt that this were true. However, when we consider that many defectives have three or more illegitimate children it does not seem that the fear of pregnancy has been in any way a deterrent factor. Moreover, we again turn to California for refutation of this belief. In this state three-fourths of the sterilized girls have been sexually delinquent before being committed to an institution; they evidently had not been deterred by the fear of the consequences. Before sterilization 9 in 12 girls had been sexually delinquent. After being sterilized and placed on parole only 1 in 12 of these girls was found to have continued her delinquency. Of course, the operation had nothing to do with the decrease in delinquency, this probably being based on the training they had received while in the institution.

The original law passed in Delaware in 1923 provided sterilization in institutions only. The law was amended in April, 1929, and now reads as follows:

> Section 4. Upon the report and recommendation of the Mental Hygiene Clinic of the Delaware State Hospital at Farnhurst or the Supertendent of the said Delaware State Hospital that any person who is confined in any institution within the State, which is supported in whole or in part by the State or by any County thereof, or who is at large, is feeble-minded, epileptic or is a chronic or recurrent insane person, the Board of Trustees or other governing body of the institution in which such person is confined, or the State Board of Trustees of the Delaware State Hospital, if such person is at large, are hereby empowered to make written application to the State Board of Charities for the Sterilization of such person; and upon receipt of such application, accompanied by a copy of the report and recommendation of the said Mental Hygiene Clinic or the said Superintendent, the State Board of Charities are hereby authorized to proceed with the sterilization of such person, in accordance with the provision of Section 1 hereof; Provided, however, that where any mental defective, coming within the provision of this Section, is at large the examining commission to be appointed by the State Board of Charities as provided in Section 1 of this Act shall consist of two physicians, and one alienist of recognized ability.
>
> Section 5. All habitual or confirmed criminals who have been convicted of at least three felonies by any Court of this State, or of the United States, or of any other State, shall be subject to observation and examination by the Mental Hygiene Clinic, or the Superintendent of The Delaware State Hospital at Farnhurst. If the said Mental Hygiene Clinic or the said Superintendent shall, after observation and examination, find that any such person's criminality is caused by mental abnormality or mental disease, a report and recommendation shall be made to the Board of Trustees or other governing body of the institution in which such person may be confined or to the State Board of Trustees of the Delaware State Hospital, if such person shall be at large; and thereupon such Board of Trustees or governing body, as the case may be, is authorized to apply to the State Board of Charities for the sterilization of such person, in conformity with the provision of Section 1 hereof; provided, however, that where any mental defective, coming within the provisions of this Section is at large the examining commission to be appointed by the State Board of Charities as provided in Section 1 of this Act shall consist of two physicians, and one alienist of recognized ability.

Under this and the previous law the following number of cases have been sterilized in the state hospital and other institutions. Number of patients at Delaware State Hospital that have been sterilized: 157 males, 45 females; total, 202. Number of patients at large brought to the Delaware State Hospital for sterilization: 9 males, 10 females; total, 19. In other institutions: Ferris Industrial School, 0; White Girls' Industrial School, 13; Colored Girls' Industrial School, 8; Delaware Colony for Feeble-minded, 27 males and 66 females; total, 93; making a grand total of 314 cases. Undoubtedly the work which has been done is but a fraction of what must be done.

Were the cacogenic stock allowed to continue reproducing as it had done formerly, it would not be surprising that if in 200 years 30 or 40 per cent of the population would be of a type that should not produce their own kind. This would naturally tend towards a degression instead of a progression of civilization. That nation which has vision for the future generations and which has considered this problem as being important in national development, will at this time lead in those aspects of life which tend toward the highest degree of civilization. If we are determined to increase the complexities of life and make its demands more difficult for the ordinary individual, it is our duty to attempt to have citizens become the type which is able to meet the demands and live happily and successfully. Even considering 1,000,000 cacogenic people, a rather low estimate, reproducing, we would have in one generation the production of 2,500,000 people who in the next generation would again reproduce; that is, based on the fact that five children will reach the reproductive level. Should these one million cases inter-marry, there would be 500,000 families reproducing at the rate of 5 children per family, or 2,500,000 children who carry the dysgenic taint. These marrying again in the next generation will give us 1,250,000 families instead of the original 500,000 families who can carry on the defective strain. It is true that it is highly impossible to predict the future increase with any degree of accuracy; yet, obviously, there would be some increase if we consider that the amount more than doubles within the next generation. In former times these dysgenic people were not protected from their environment or from themselves, and undoubtedly fewer survived. At the present time we do all in our power to protect them from disease and harm and from destruction in war, which probably occurred to a far greater degree previously. Consequently, if we wanted to take the humanitarian attitude toward those unfit to care for themselves, we must then protect the nation by some mechanical means.

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ABNORMAL REACTIONS RESULTING IN SUICIDE

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Suicide is possibly the ultimate escape from reality, since it is the result of obliteration of one of the fundamental instincts of life, that of self-preservation. There is in the personality an absolute refusal or non-ability to face adult problems, eventuating in conflict and escape. The precipitating cause of the escape reaction may be on a rational or irrational basis, viz: it may be something which is actually present in the individual's environment, or on the other hand, it may be something based on a series of delusions or hallucinations. From a practical viewpoint, we can thus differentiate suicides occurring in psychotics and in non-psychotics. Of course, it is always a question as to whether or not all people committing suicide are suffering from at least a temporary state of mental aberration.

It would seem that each individual has a certain point of resistance in his psychological mechanism beyond which escape is essential. The farther we proceed in civilization the more numerous and complex the situations which tend to break down the resistance, and the more numerous the individuals who find it necessary to seek escape. There seems to be no authentic record of suicides among animals. Among savage races it is comparatively rare. It is even more common among the white races than the colored. It would then seem probable that the increased complexities of life produce the more unfavorable psychic action, as it hardly seems possible that they would lower the threshold of resistance. On the contrary, it would seem that being brought up in situations where economic and physical trauma are common occurrences, that the individual's psyche would react to the laws of nature and produce a higher threshold. Speculatively, one would rather state that were the demands of our modern civilization forced upon a group of savages that their suicidal rate would be much higher; in fact, much higher than those who have been brought up from infancy in the varied situations which culture and civilization have produced.

We, then, have suicide resulting when the conflicts of life, whether real or imaginary, pass the threshold (which varies in direct ratio with individual stamina and with the state of civilization in which the subject lives) eventuating in an ultimate and complete escape. Since suicide is an escape reaction from reality with a complete submersion of the individual, we do not find it occurring frequently in dementia praecox, based probably on the principle that the schizophrenic individual has already developed a satisfactory escape mechanism in which his true personality is thrust. One cannot readily rationalize a suicidal reaction in a praecox, except in those cases of paranoid type in which the splitting of the personality is incomplete. Suicide rather belongs to the depressed state, or to that group of borderline cases in which it is difficult to make a diagnosis. True, one of the mental guards always present in the normal mind is broken, and this being so it would logically seem that sanity must be lost. Since, as we have stated before, suicide is the result of the loss of one of the primitive instincts present in all animal life, the individual cannot be entirely normal, no matter how noble his reason for committing the act. I should consider this true even if the suicide occurred in such countries where it is considered an act of bravery rather than a crime, as it is thought of in our own states.

Although there is another group which does commit suicide but which cannot be classed among the irrational or rational groups, it would seem that we cannot think of these people as true suicidal cases. I am now referring to two classes, viz: those psychopathic individuals who make various attempts in order to gain attention and sympathy and whose mechanism is not one of escape; and those few cases in childhood where the revenge motive against the person in authority results in the child taking his life, with probably very little conception of the actual meaning of death. In these cases the instinct of self-preservation is present, but the conception of the ultimateness of death is not clearly conceived. In the former cases actual suicide is not intended, but the individual, thru error in judgment, at times succeeds actually in what was merely a dramatization of a personality.

There has been, according to statistics compiled, a gradual increase in the number of suicides. During the years which followed the war a decrease was again noted, possibly based on the fact that at that time life was more secure and difficulties were more readily surmounted. Undoubtedly, since the depression of 1929 there has been an increase in the number, at least for the first years, until civilization could readjust itself to the change in standards. Undoubtedly, the lessening of religious standards towards suicide and the tendency towards agnosticism has lessened the resistance of the individual, since he has lost his fear of the life after death. This is probably brought out by the fact that among those professing the Catholic religion there is considerably less suicide than in other religions, in which suicide is looked upon with much less concern. The rate of suicide per capita is much higher in prisons and in institutions for the insane than it is in the community at large, with a higher percentage, according to certain statistics, being found in the prisons. There is always a question, however, in this case as to whether or not insanity were actually present and had not been present for some time among those prisoners who attempt to take their own lives.

That the desire for suicide often is a temporary phase of the mental mechanism and not a permanent desire is shown by the fact that many attempts which have failed are not repeated; the individual, during his period of treatment after an attempt of suicide, being able to readjust himself in a satisfactory manner. Laws making suicide a criminal offense would seem futile and ridiculous since, we cannot punish the dead and the true suicide fully expects his attempt to be successful. Moreover, whether an individual has a right or not to take his own life is a question which cannot ever be definitely decided and is a part of each one's philosophy of life. The question which would rather interest the professional man more would be what mechanism is present that causes the individual to reject everything for the security of death. Among the trades and professions we find that the lowest rate of suicide is among teachers and preachers. In both cases we find individuals who, although grossly underpaid, lead a life of less strain and confusion. On the other hand, the rate seems to be very high among lawyers and doctors, where the responsibilities are heavy and where there is very little complete relaxation. It would seem entirely probable that the less intellectual group would be more apt to find their escape in insanity rather than in suicide. The suicidal cases at the Delaware State Hospital, both those who actually succeed as well as those who merely made the attempt, show various etiologies. At no time has it occurred in a mentally defective individual.

The first case to be discussed was that of a young girl who committed suicide by poisoning. She was brought to the hospital from the court after being arrested for attempting her life. At the time of admission to the hospital she was twenty-eight years of age. The past history is rather typical of that of a psychopath. She had no difficulty until the age of eleven or twelve, at which time there was distinct evidence of abnormality in her personality makeup. She married a man who was also a psychopath and alcoholic. Early in life the girl became alcoholic herself and became addicted to sedatives. At the age of twenty-two she commenced her suicidal attempts which were almost innumerable at the time of her death. The method of preference was by means of poison, although knives and razors were also used, as well as attempts at drowning and eating glass. Although she endeavored to strangulate herself this method was infrequent. Yet, in every instance, there seemed to be someone present who could afford immediate first aid. Physically, the girl was grossly negative. During her entire stay at the hospital no rational reason could be discovered for her behavior, and at no time was she hallucinated or delusional except for several occasions when she developed a drug psychosis after attempting to poison herself with veronal. The girl demanded constant attention, and received considerable satisfaction from the turmoil which resulted. After her attempts she would become quite amenable, then for a time make a fairly satisfactory adjustment. Finally, she managed to obtain lysol, and by means of this killed herself. It is questionable whether she realized that she was taking a sufficient quantity or recognized the dangerous nature of the poison, and immediately on drinking she intimated to the attendant that she had taken it.

Throughout the study of the patient it was never felt that her suicidal attempts were of a serious nature. The girl was classified as a psychopathic personality based on infantile reactions and inability to adjust, in spite of the fact that she had rather unusual opportunities. The financial situation was never an important problem in her life, since her husband, who was also mentally abnormal, had been left a trust fund by his father which was ample to care for them. Her reasons for attempting suicide were inadequate. The attacks of depression, when they occurred, were in no way deepseated and could be readily averted by giving her some special attention. When she felt that she did not receive this attention the suicidal attempt almost invariably resulted.

The second case illustrates the condition in a schizophrenic personality who still has considerable contact with life, a rather rare type to attempt suicide, and a condition in which physical ailment and disillusionment play a great part. This girl's past history was that of continual ill-health since childhood. At the age of approximately twenty-one she had a thyroidectomy, with resulting tetany, associated with intense fear of the possible outcome of her physical condition. She was always more or less humored by the family because of her physical status. The family was intensely religious, and she followed their belief until all attempts to improve her physical condition failed, when she became reactionary. Approximately eight years after her thyroidectomy she became more markedly depressed and definitely paranoid toward the family. She was first institutionalized in Pennsylvania and later brought to the Delaware State Hospital. In interviewing the patient at no time did we find a relaxation of the attitude of antagonism toward the family, or the resulting despair as to the outcome of her life. Her attitude is colored by restlessness and a desire to travel, with the hope that she will escape some of the mental reactions toward her family. She has turned entirely against her religious beliefs, takes no interest in life, and does not seek particular attention except in attempts to have herself released from the hospital. Her attitude has always been vindictive, and, with the exception of that of one or two people, attention irritates her. Her numerous attempts at suicide are done in the utmost secrecy, and only extreme vigilance has prevented them from becoming successful. Contrary to the first case described, she is rarely a disturbing element on the ward, keeps to herself, refusing to associate with other patients. She explains her attempts at suicide as a complete loss of interest and despair of ever obtaining physical health. Her depression is deepseated, and it is impossible to alleviate her condition. A definite etiology can be determined through a life of continual physical ailment, disillusionment toward her family, and a severe reaction towards her strictly religious training early in life.

The third case to be described is a woman of fifty, whose early life showed nothing of importance. However, she lived years under severe marital difficulties, which resulted in depressions and conflicts in an individual who was inclined to be introspective. For a period of three months she became abnormally depressed without reason, and after two suicidal attempts she was brought to the State Hospital. She was quiet and accepted the ward routine without hesitancy. She repressed her feelings effectively, but had a definite delusion that she was incapacitated for life. At no time did she complain about the family situation as the etiological cause of her psychosis. She committed suicide by taking poison, which was obtained with the greatest secrecy, while no one was present. Nothing was said to the nurse or the attendant about her attempt until the pains became so severe she could no longer endure them. It was an attempt of suicide in a manic depressive psychosis, suicide in this condition being one of the serious and relatively frequent symptoms which develop.

The fourth and last case was a woman sixty-two years of age, who was admitted after a severe physical ailment with a diagnosis of manic depressive psychosis. She had had a previous attack twenty-five years ago, with a duration of two months, from which she entirely recovered. Her present attack started over the depression. She not only worried about the situation in her own family, but about everyone with whom she came in contact. On admission, it was difficult to hold her attention, and she was confused, agitated, and cried hysterically. Her depression was deep, and she maintained throughout her stay that nothing could be done to relieve her situation, that she was becoming insane, and that her case was hopeless. She was isolated and everything was taken from her except a few necessary articles of personal clothing. It was by means of these that she managed to strangulate herself.

Of the four cases described, we have the last two who undoubtedly had a very good chance to recover from their suicidal tendencies had they not unfortunately succeeded in their attempts before the mental disease was relieved. Their symptoms and attitude were characteristic of the manic depressive psychosis, depressed type, with concomitant manifestations of hopeless despair and a feeling of futility as to recovery.

The second case described is a more unusual type, found in a young woman, who is diagnosed as dementia praecox, paranoid type. Her conflicts on a religious and physical basis are deepseated, and reaction to treatment is poor. Her delusions are allowing her to compensate for her physical status and her suicidal desires will eventually allow her to escape from the religious conflicts and possibly from a submerged feeling of guilt because of her rejection of her family and her beliefs. Her antagonism is marked and does not allow for successful psychotherapy. Should vigilance be relaxed in any way, the girl will undoubtedly be successful in her attempts at suicide.

The first case can really be classed as an error in judgment. She was a girl who from early childhood demanded attention, no matter by what method. She was emotionally infantile and was unable to adjust in an adult world, being a rather typical type of psychopathic personality. Still craving the attentions of infancy and discovering that suicidal attempts would obtain these for her, she continued an innumerable series which finally resulted in her taking a corrosive poison from which it was impossible for her to receive aid.

All of her attempts were followed by pseudo-remorse, during which time she apologized profusely for the difficulty which she had caused. Fundamentally, she enjoyed life and under special attention and pleasure she was light-hearted and contented.

MESENTERIC THROMBOSIS IN A CASE OF GENERAL PARESIS

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It is said by Cecil that mesenteric thrombosis is a fairly common condition, but most writers agree it is a comparative rarity. It is rarely accurately diagnosed except at autopsy. Perhaps with the increasing number of autopsies now being done in most hospitals, eventually the pathological and clinical findings will in these cases more closely coincide, and result in a readily identifiable train of symptoms.

Our present clinical knowledge can be summarized as follows: The mesentery may suffer thrombosis or embolism as the result of vascular disease, such as endocarditis or arteriosclerosis. Intestinal necrosis or perforation with general peritonitis are late results. The symptoms vary somewhat according to the cause, extent and duration of the occlusion. An underlying disease such as indigestion or syphilis may be suspected. In considering the differential diagnosis of mesenteric thrombosis the following conditions are most likely to be confused: Perforation by a duodenal or gastric ulcer, intestinal obstruction, acute appendicitis, acute cholecystitis, and acute pancreatic necrosis. Usually an acute abdominal pain generally distributed over the abdomen and but rarely localized, develops suddenly, following by reflex vomiting. Early in the case there is little distention or muscular rigidity. This absence of resistance and the subsidence of the abdominal pain after an hour or two are characteristic symptoms. Constipation is the rule, but small bloody stools may be passed. The treatment, of course, is surgical, provided proper diagnosis is made.

From a report of one of the large clinics in this country, 11.4% of the cases are correctly diagnosed before autopsy. Others report that only 4% are correctly diagnosed. In a collected group of 500 cases there were only twenty-four successful operations. Sheehan reports only 13 cases in 48,000 admissions to the Massachusetts General Hospital, and Ross reported only two cases in 30,000 admissions at the Lankenau Hospital. Men are more frequently affected than women in the proportion of two to one, and between twenty and sixty years of age. The superior mesenteric artery is involved about five times as often as the vein.

With the general symptomatology in mind, suppose we follow a case through to its termination, and see whether it conforms or deviates from it. A resume of the mental findings as well as the physical will be made.

W. C. entered the Delaware State Hospital April 15, 1932. The social history stated the patient had been born 48 years ago in Canada, had entered the United States twenty-seven years ago, and spent the past 13 years in Delaware. Was always a quiet, friendly man, a printer by trade. Married 31 years ago; no children. Had always been healthy. Operated on two years ago at St. Elizabeth's Hospital, Richmond, Virginia, for a right indirect inguinal hernia. Was in the Delaware Hospital, Wilmington, for two weeks in December and January, 1931-32, and a diagnosis of left direct inguinal hernia was made. At both the foregoing hospitals the blood Wasserman was found to be four plus.

Apparently patient's mental trouble was not noticed until about two weeks before commitment. At this time he read an advertisement in a newspaper that a radio announcer was wanted in New York. In spite of his wife's objections he applied for the position, though totally unfitted for it. The next morning he told his wife he was going to receive $25,000 a week for singing over the radio. He began singing practically all the time, eventually became ugly and threatening towards his wife, and his writing became meaningless and unintelligible.

Physical examination on admission: Height, 5 ft., 6¼ inches; weight, 146½ lbs. Teeth in very poor condition. There was oedema of the ankles. Evidence of beginning myocarditis. Blood pressure, 146/86. Small scars on the glans penis. Internal strabismus of the right eye, and patient was almost blind in this eye. Romberg slightly positive. The right knee jerk appeared less than the left. The left Achilles could not be elicited. Skin reflexes were absent, except the right abdominal was elicited. The right pupil was larger than the left, reacted very poorly to light and accommodation; the left was smaller, and reacted better to light and accommodation. Fingertip admitted to left inguinal ring, no protrusion of viscera, however. The urine was negative up until June, when a few casts were found. Blood Wassermann, four plus. Blood picture practically normal. Blood sugar, 90; urea, 16. Spinal fluid Wassermann, four plus; colloidal gold, flat; spinal pressure, 18; cell count, 7. X-ray showed pyorrhea of lower centrals and laterals. Examination by the ophthalmologist showed vision of the right eye, sees fingers at one foot at an angle; the left eye, vision is 20/100ths. Right eye, there was evidence of a cataract, and the pupil was apparently adherent to the cataract; unable to get a good view of the fundus; left eye, fundus normal. Examination by the otolarynologist—nose and throat negative.

On admission, mentally the patient was found to be unstable emotionally, very grandiose, restless, judgment weak, reasoning poor, delusional, and hallucinated. After admission, the patient would frequently disrobe, was very noisy, and at times threatening and obscene. His grandiose ideas varied somewhat, but always focused about the fact that he was a great radio announcer. He declared that he had six wives and a dozen beautiful daughters, and offered them all at various times to anyone who would help him elope. There was considerable memory impairment, particularly for recent events, and he had no insight, time relations were much distorted, and he eventually developed a decided paranoid trend, declaring he was confined in the hospital by his enemies so that they could enjoy the millions he had acquired through his wonderful singing.

The case was presented to the staff, and a diagnosis of general paresis made July 15, 1932.

Progress in the hospital was more or less uneventful, except he managed to escape once, but was found the same day and brought back. Occasionally, after a full meal, the patient would complain of a slight pain about the left inguinal region, presumably from some irritation at that point, though there was no actual protrusion of the viscera such as had been found prior to admission. Patient went out with an exercise group daily, and for many weeks attended the occupational therapy shop, where his work was naturally of poor quality, but it did have the result of distracting his attention from his delusions for the time being. Of course, throughout his stay he received anti-luetic treatment.

February 15, 1934, the patient had a series of convulsions of the epileptiform type, followed by a rise of temperature. Sodium luminal, grs. 5, was given intravenously, and chloral hydrate via rectum to control and stop the convulsions. The patient remained in a stuporous condition until the next day, when he would partially rouse up, and take liquids in small amounts by mouth. Blood pressure at this time was 124/80, and spinal pressure 24 mm of Hg. in prone position. The day following the convulsions there were frequent twitching movements of the right arm and shoulder muscles. Three days later a flaccid paralysis of the right arm was apparent. The fingers could be partially flexed, but otherwise there was complete motor paralysis of the extremity. At the same time patient came out of his stupor and began taking an interest in his surroundings again, swallowed without difficulty, and temperature, pulse, and respiration became practically normal. The patient was placed on a soft diet, and an adequate amount of liquids was given daily. Apparently, during the following week, he appeared to be improving, as he partially regained the use of the right arm, being able to completely flex the fingers, and able to raise the forearm, using the resting elbow as a fulcrum.

February 27, 1934 patient's temperature suddenly rose to 102.4, without any discoverable reason. There was no complaint of any abdominal distress. The pulse rose to 140 per minute, and respiration to 30. There was no arrhythmia present, and no cardiac murmurs detected. Blood pressure was 112/80. The next morning at 8 A. M. the temperature was 96.6, pulse 114, respiration 26. At 4 P. M. temperature was 100.4, pulse 84, and respiration 24, with the patient still taking soft diet and liquids, but requiring a low S.S. enema to clear the bowel. On the 29th of February, temperature rose again to 102, but fell in a few hours to 99, and from that time to the time of death six days later, did not rise to more than 99.8, though half an hour before death it rose to 101. White blood count March, 1934, was 7,300; hemoglobin 80%. The day before he died patient passed a considerable quantity of bloody urine, and this was repeated again on the day of death, March 6, 1934. To be emphasized in this case was the complete absence of any sign or complaint of a severe pain. There was a moderate abdominal distention, but no rigidity.

At the autopsy performed March 7th, the day after death, the ileum was found to be highly injected, and that portion supplied by branches of the superior mesenteric artery necrotic and the vessels thrombosed. The pathologist states he found, on microscopic examination, the following: A section, taken to include the thrombus, shows the endothelium irregularly roughened and giving rise to thrombus. The thrombus is old and appears as a mass of amorphous, indifferently staining material. In only a few places is there evidence of organization. The only other findings of moment were adhesions about the left inguinal region and omentum at the site of the former hernia there, an injected bladder mucosa, numerous small scars in the aorta, and the brain showed a slight granulation of the ependyma.

So here we have a case of neurosyphilis dying as a result of a mesenteric thrombosis, but with atypical symptoms; in fact, not a thing that would lead one to suspect such a consummation. No doubt the underlying organic disease, general paresis, confused the symptoms both objectively and subjectively, and only at autopsy was the cause of death demonstrated. This case illustrates again the problem confronting the diagnostician in mental cases: lack of co-operation on the part of the patient, and the presence of an old organic disorder making it more than usually difficult to determine the exact cause of the trouble.

THE MENTAL HYGIENE CLINIC AS A CO-ORDINATING UNIT

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To be of practical service to the community a state mental hygiene clinic synchronizes with public institutions, agencies, state and local officials, and members of organized medicine. The clinic operates in conjunction with the referring agency in regimenting all available community facilities in the interest of its client. Insomuch as the problem to be dealt with never lies wholly within the patient himself, the clinic is obligated to reach out into the community for an appraisal of factors and a solution of difficulties. This means liaison with each organized field of public endeavor, including education, the legal system, industry, religion, health, and even amusement and recreational facilities.

Specific instances may be cited to demonstrate the importance of community relationships in the operation of the mental hygiene clinic of the Delaware State Hospital.

A man suffered a severe nervous breakdown, requiring prolonged stay in the hospital. His family at home rearranged itself in his absence, each member assuming a new role, requiring of each other more or less fixed responsibilities and indulgences. The patient became comparatively recovered under institutional regimen and was ready to return home. If the family had not been helped to adjust to the patient's return and make a place for him in the household, the patient would have been taxed to the limit to meet conditions, and in all likelihood would have been a failure on parole. The family comes to figure equally as important as the patient in maintaining permanent recovery, and efforts are accordingly directed toward securing this adjustment. This, however, is community co-ordination in its narrowest sense.

In another case a boy is referred to the clinic for "bagging school." Examination of the boy, himself, reveals no noteworthy deviation from normal. On investigation, it is found that the boy has recently been deserted by his father and mother and has been left with grandparents who are destitute. He is not adequately cared for or supervised, and falls into habits of loose living. Here, the co-operation of relief or home placement organizations and the establishing of a stable home background are of the first necessity in enabling the boy to meet ordinary school regulations.

Another boy has been referred by a child supervising agency because of extreme fear states. He has been reared for several years in a foster home, along with a younger sister. The boy is very dull in school, failing repeatedly, and he has been surpassed in grade standing by his younger sister. The foster-parents became enraged by the boy's school record and by his seeming indifference. Each night they compel him to get his lessons from his younger sister. When he refuses he is whipped, and often sobs in tears for a long time with his head on his arm across the table. Examination of the two children shows that the boy's intelligence and his capacity for doing book work is far inferior to that of his sister and even below that which might equip him to do the work of his grade even with maximum effort. He is mentally unqualified to do the work, just as a boy might be physically disabled for doing certain chores. In this case the co-operation of the school officials is obtained in securing an educational rearrangement within the boy's grasp. The assistance of the agency workers is employed in advising the foster-parents and in instructing them about the boy's handicap, with the object of relieving the temperamental disorders for which he was originally referred.

In the same light the clinic is indispensable to the public school system. A number of children have been failing in their lessons, requiring special consideration from the teachers, so that time is lost on the class as a whole. Psychological examination establishes intelligence levels and capacities of these retarded children, determines prospects for school progress, notes special disabilities and aptitudes, and leads to class placement in line with the findings.

A different aspect of clinic service is illustrated by an application on the part of a foster-parent for the adoption of a child. Before that child is declared eligible for adoption, in fairness to the parents, the native intelligence and general personality makeup, as well as physical condition, are estimated by routine clinic examinations.

A candidate for work relief has been assigned to various jobs without success. Much time has been spent by the relief worker in attempts to place him satisfactorily. Although in good physical condition and of acceptable appearance, he is found on clinic examination to be actually feebleminded. The time and efforts of the relief agency are spared by committing this dependent to the proper institution.

In institutional admissions and commitments, either welfare or penal, the mental condition of the candidate should be determined accurately before he is required to meet the disciplines of the place on even terms with everyone else. The study of prisoners in the three workhouses of this state suggests the desirability of examining persons convicted of felonies before sentence is pronounced. In view of the limited information before the court, the presiding judges have exercised wisdom and prescience in passing sentence. However, the large number of repeating offenders points to the need for knowing something about the motivation of the general behavior of the criminal, apart from the facts immediately relevant to the act which brings him to the attention of the court. A home investigation, a knowledge of family interrelationships, educational and vocational records, and a personality study would assist the court to make a disposition favoring rehabilitation of the criminal.

The work of the mental hygiene clinic interlaces with that of practically every public agency. Some idea of the extent of co-ordination of the clinic, since its establishment in August, 1929, with other institutions and agencies is gained by the list of sources of referral and the number of cases examined from each source up to the present time.

Sources of Referral	Number of Cases Referred
1. Dept. of Public Instruction	3,043
2. Juvenile Court	535
3. Reformatories	600
4. County Prisons	129
5. State and Local Officers	75
6. Delaware Colony for the Feebleminded	214

7.	Welfare Homes	217
8.	Children's Bureau	379
9.	Family Society	79
10.	Mother's Pension	54
11.	Other Organized Welfare and Relief Agencies	150
12.	State Board of Health	65
13.	Visiting Nurses' Asso.	28
14.	General Hospitals	20
15.	Private Physicians	272
16.	Delaware State Hospital Patients	541
17.	Relatives of Delaware State Hospital Patients	24
18.	Delaware State Hospital Employees and Applicants	224
	Total	6,649

Thus far, mention has been made of co-ordination with agencies only in regard to the classification of clients. It is not so much as a classification clinic as a treatment clinic that the mental hygiene division of the Delaware State Hospital has given its most effective service to the state in the past five years. Cases selected according to their needs are handled by direct approach, in co-operation with the referring agency. While members of the clinic staff are devoting themselves to the psychogenic, experiential, and constitutional problems presented by the patient himself, visiting teachers and nurses, social workers, and probation officers are realigning community factors in his behalf. In instances where this help is not available by reason of lack of adequately trained personnel, the social service department of the clinic performs this duty. To some degree the clinic functions in co-ordination with each public agency and institution in the State.

PSYCHOTHERAPY IN THE MENTAL HOSPITAL

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In our psychotherapeutic efforts we work with a broad, pragmatic philosophy of helpfulness, grounded in common sense. In the past, specialized types of therapy with the forms of suggestion, persuasion, hypnosis and, more recently, psychoanalysis have been held out as sources of exclusive salvation. The plasticity of human facts and troubles and the multiplicity of situations in which they may arise, however, bid us toward a more inclusive psychotherapeutic method, one which deals with facts and events at their source with a common sense effort toward collective understanding, melioration, and control.

The first step in this approach is the investigation of the problem seen or sensed by the patient, his family, or family physician. This directs attention to the following questions: "What are the facts and troubles with which the patient comes to the hospital?" "Under what circumstances do they arise?" "How do they work?" "What are his reactions, and with what effect, and how, can they be modified?" In other words, a systematic effort is made to find out what is going on in the patient's mental life and behavior, why and how it is going on, where do opportunities for help lie, and how can this be utilized? This is the bald, common-sense application of what Adolf Meyer calls a genetic-dynamic analysis and synthesis, which emphasizes the workings rather than merely the structural status of human beings. We state in plain terms actual life reactions in such and such situations, under such and such conditions, with such and such results. The situations and findings are acted upon in the direction and in the cultivation of a more acceptable social philosophy.

In order to focus attention on what is essential we take up first the complaints which the patient brings to us in concrete samples of his acting, living and thoughts, because they are the material which must be fitted into an acceptable and dependable program of daily life. Diagnostic and prognostic considerations in this scheme become secondary to a determination of the patient's problems. We want to see the present in the light of a genetic-dynamic development, keeping alert for the openings of modifiability which the opportunities of the hospital and the patient's personality needs offer.

The specific type of treatment followed depends to a large extent on the type of case with which we have to deal. Problems presented by the rank and file of our psychiatric cases show a wide range. Common ones are attitudes of inadequacy toward one's constitution, performance or outlook; a tendency to see trouble in the attitude of others or in one's own functioning; dissatisfaction with father, mother, family, or with broader social relationships; abnormal behavior resulting from a discrepancy between ambition and capacity or performance. Other results are lack of emotional harmonization, expressed in emotional inadequacy or over-responsiveness to the various conflicts and cravings. Or there may result extremes of reactions in activity tendencies or evasions and dodging of reality by means of distortions or false elaborations of thought and experiences.

On entering the hospital the patient is asked to describe his complaints, which are then amplified by further questioning as to how these arose, and also by psychiatric and social investigation, mental and physical examination. The patient's complaint is faithfully recorded, for in a simple form and in his own language it formulates the problem needing adjustment. From it we proceed to the factors at work, the evolution and story of the condition faced, its working and effects, together with the modifiability of the whole or its parts.

When the patient first comes to the hospital the physician makes it his task to see how unavoidable difficulties present could be made bearable for each day until some relief or turn for the better takes place. Our desire is to make the patient reasonably comfortable, and to avoid unnecessary environmental or subjective complications and troubles. The first few days will offer evidences of the complaint problem in the patient's appearance, behavior, and relationship to others on the ward. These are the problems to be tackled by a more comprehensive treatment. While we do not minimize the complaints, there should soon develop a clear understanding on the part of the patient as to what facts medical and common experience can accept and what facts merely appear so because of the way the patient looks at the facts. As far as possible the patient is asked to avoid generalities and to state complaints in terms of specific samples and concrete reactions, so that we may better know how it comes, goes, becomes eased, etc.

In the next step we go for a more detailed analysis of the factors at work. The patient naturally has a flood of poorly-digested impressions and experiences which have to be sifted out by means of an orderly procedure. The various factors are scrutinized and their share and management in the present trouble considered. Always on the level of concreteness, the patient is shown how the various events and situations might have been handled if understood in the light of a different perspective. Depending on the responsiveness of the patient this is brought together in a personality evaluation in which the intellectual, emotional, sex, energy, sleep functions, social and personal difficulties and handicaps receive consideration. The patient senses what the liabilities are and what assets there might be for a reconstructive synthesis. We aim for a desensitization of sore points, a sensible understanding of the self, and a constructive utilization of opportunities in a framework of sound life habits. Problems and personality are formulated in a language not too far ahead of the patient's capacity to formulate the facts. This is done as objectively as possible without becoming discouraging, so as to contain an ideal which will not obstruct his opportunity to be true to himself and his vision. The ideal is not some pattern of advice or preachment imposed by the physician but the best vision offered by the patient's own material — something which he can accept, work with, now and later in life.

The case of M. A., a 42-year-old plasterer who developed a depression with delusional formations, illustrates how effectively in many cases this psychotherapeutic approach will work. He was a man of somewhat limited mental resources who, in the setting of unemployment, financial worry, and the stresses and strains of social and professional obligations somewhat beyond his limited mental capacity, became depressed, with restlessness, general slowing down of psychomotor activities, reduction of push and energy, and ejaculatio praécox. The latter gave him considerable concern, and with the guilty feeling of his own sexual infidelity before him, and his wife's frigidity he developed some distorted ideas and misinterpretations about his wife's faithfulness. He was suspicious that it was her unfaithfulness which was the basis of his own sexual difficulties. With the welling up of these and some related distortions occurring some years previously, he was brought to the hospital. With the reformulation of the problem to him in such a way that he could sense his own personality assets and liabilities and the role which the various situational factors played in his mental illness he gradually developed a sounder perspective and more realistic attitude toward his life situations. In less than two months he was able to return to the community, a mentally well man, able and willing again to assume family and social responsibilities, which were more adequately adjusted to his capacity.

The psychoanalytic form of psychotherapy works largely through the resuscitation of early childhood memories and associations. We recognize, of course, the extension of the patient's past mental life into the present, and indeed lead him toward the cultivation of a greater tolerance for forgotten or submerged sore points. He may not at first be capable of talking about these, until the way is gradually opened up. As he comes to understand them and accept them he is helped to develop a more tolerant vision of his past and a more constructive attitude toward life problems.

How a suppressed incident can form a sore point in the patient's mental life is well seen in the case of P. S., a 27-year-old housewife who after considerable psychotherapeutic probing recalled what she fancied had been evil thoughts and sexual conduct toward her boarder. She was a young woman with an emotionally immature and dependent personality, a woman with a sentimentalizing, quiet disposition, given to excessive religious zeal and interests, with a tendency to shallow moralizing. In the setting of financial worries, physical illness and later religious scruples over sexual conduct and thoughts she developed a catatonic excitement. This was preceded by psycholeptic snapping sound in the head, and there followed incoherence and irrelevance, in which religious delusional trends and misidentifications and an exalted state, alternating with crying attacks, guilt and self-accusatory ideas, and later suicidal attempts were the outstanding features. After the excitement subsided and the patient became accessible she was gradually led to assume a greater tolerance for her imagined ethical failure. She gradually recovered a more balanced view of life and her own nature and was able to return to the community.

But our main therapeutic emphasis lies in the patient's utilization of his assets and resources in his day-to-day activities, so that he avails himself of his time, capacities and opportunities. The patient comes to realize from the first that what he is now doing with his time is of importance for his readjustment, and throughout the treatment he is led to evaluate his improvement on the basis of his performance and ambitions. He is led to cultivate a satisfaction in completed achievement, no matter how humble. In his activities his fumbling, difficulties and productions are noted and we observe what obstructive experiences of the past may be reappearing which could be reduced or eliminated.

As will be seen, the emphasis is on habit training — the cultivation of a dependable equipment of habits. Occupational classes, as well as the facilities of ward and hospital plant, are utilized in the planning of time and activity in accordance with the patient's capacity. The patient is urged to prepare for the next day and to cultivate a sense of opportunities for increasing achievement on better days. In psychotherapy, as in the best methods of education, the ideal is to render the patient sensitive to further possibilities and to a condition where he can take freer advantage of them. What we seek to create is an organized system of action tendencies that can be reasonably depended on to carry the individual along a path of maximum usefulness to himself and to those about him. Personality expansion with a compatible degree of social obligations and responsibilities is the fundamental basis of our democratic civilization as well as of the philosophy underlying the psychotherapy which endeavors to help individuals adjust to it.

To hold out a more balanced philosophy of life, a perspective of social and personal responsibilities — one in which our actions and tendencies are socially guided and transformed in harmony with the social good, has to work through the principle of understanding. This implies joint participation, sharing and communication, which is not possible with many of our patients. At times the physician has to assume leadership, give guidance, and outline a program for the patient's best interests, with the goal that this is to lead to an ultimate emancipation and self-discipline. When the patient's associative resources are too limited or otherwise inaccessible to an approach of mutual understanding, a more automatic form of winning over is utilized. By means of hypnosis, which is a form of a blind acceptance of what the physician holds out, unanalytical patients may come to be inoculated with a more wholesome set of attitudes and performances. Reassurance, especially in regard to some fancied physical illness, suggestion and persuasion toward some substitutive interest and participation are sometimes used.

M. T. was a 57-year-old fairly intelligent housewife with somatically fixed anxiety state. She had a long history of psychoneurotic trends and behavior peculiarities, manifested in nail biting, complainings, over-meticulousness, a rather stubborn disposition, and respiratory mannerism which had in the last few months developed into a persistent, dry, hacking cough, coming on in a setting of worry over an elusive body rash, and being preceded by bronchial cold. She has always had a defective vision, with congenital paralysis of the left external rectus, and with the onset of the nervousness and fretting over the urticarial rash and the persistent cold, together with the change in glasses, the cough had become accompanied by mistiness of vision, with increased anxiety, fretfulness, fear of losing her vision and of choking to death, and an excessive pre-occupation with these to the almost complete preclusion of interest in usual social and domestic activities. With persistent reassurance about her physical condition, through helpful conversations in which attention was drawn to demonstrative situations when she would be symptom-free, she was helped to organize a better balanced emotional outlook and a more wholesome set of interests, with complete recovery.

A few words about the treatment of specific types of cases. In cases of depression, in place of the urgings and exhortations of the family and friends, which merely harry and further upset the patient, an understanding attitude with a wholesome regime of activity, rest and diversions is substituted. There is, of course, the usual attention to the vegetative functions, together with pharmaco-dynamic and hydrotherapeutic helps. The patient's condition and its development is reformulated to him in such a way that the problems which preoccupy him are reduced to a juster perspective. He is brought to accept the fact that he is a sick person and led to see that the troubles which loom so overwhelmingly take on their size by seeing them through an emotionally sick outlook. We then help to promote in him a capacity to substitute for his distorted, partial or fixed statement a view that does justice to a wider range of responsible factors — one containing the elements of a reconstructive outlook.

In reactions of hate, aversion, fear, and more rigid depressions, the emotional-associative patterns often become fixed and inaccessible to frontal atack. To avoid defense attitudes, argument is avoided and from neutral topics first, problematic points are approached with a gradual inclusion of the fixed and sensitive views. At times the patient's dreams and unchecked fantasy are utilized in getting new slants, and the physician's skill and imagination find challenge in mobilizing the patient's resources toward a more wholesome goal.

In delusional states we are faced with the problem of helping the patient see and accept reality. This cannot be done by insistence or contradictions or argument. This will merely arouse antagonism and defeat our purpose. The physician must listen patiently to the delusional story without, however, allowing the patient to believe that he accepts it. We offer instead an alternative version, so that the patient comes to see his version as one possibility and the physician's as another. These parallel hypotheses often carry an overlapping middle ground, opening up chances for squaring situations with reality and for corrective influences to slip in. When the delusions have become systematized we look for neutral ground where the greatest amount of normal material can be included without engendering opposition. Clashes are avoided by pointing to the possibility of varying interpretations. We hold out to the patient a way of life which gets along with facts without too much friction. With an ease of mind, and getting together, we try to gain time so that what seemed at first insurmountable obstacles diminish by rising over them or getting around them in the discovery of common meanings.

The automatic clasping reflex of the infant becomes submerged and later abolished as it is gradually incorporated into an increasingly wide variety of hand usage. So in the reflex-like obsessive states we have the patient cultivate a wide range of activities within the sphere of the compulsive tendencies. With the chain weakened and the sense of obsessive obligation diminished, we go for the precipitating factors which often give us clues for opportunities in the creation of a program of daily life in which fancy and reality are better blended with the gradual digestion of disturbing memories.

No discussion of psychotherapy in a mental hospital would be complete without mention of the nurse and the other collaborators having a constructive interest in the patient. Since the actualization of the twenty-four hour program is so largely dependent on the nurse she is made familiar with the problems, needs and resources of the patient so that she may better know how these can be accommodated to a profitable daily program. With their help, in our common sense psychotherapeutic endeavors, we strive toward an understanding and mastery of the facts of daily life through the better harmonization of the personality, habits, perspectives, and the environment and the assimilation of a socialized conception of living.

PSEUDO-HYPERTROPHIC MUSCULAR DYSTROPHY IN BROTHER AND SISTER

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The condition, of which these two cases are examples, was first recognized as a distinct entity by Duchenne who gave it its name in an account of it published in 1861. The condition is sufficiently rare to constitute one of the medical curiosities. Particular interest in this condition has been stimulated by recent developments along various lines in attempts to establish the etiology of the condition and by reports of favorable results from certain methods of treatment. It is intended to give these methods of treatment a thorough trial in these cases. An evaluation of therapeutic results cannot, however, be made at the present time.

Pseudo-hypertrophic muscular dystrophy is a disease manifesting itself usually during the later developmental period of childhood and evidently depends upon a morbid developmental tendency which is often present in several members of the same family. It is characterized by a progressive change in size and diminution in power of many muscles. These muscles may be larger than normal or smaller. It is the apparent enlargement with accompanying decrease in power which gives the condition its name. The enlargement of muscles, together with increasing hardening, is due to an abnormal growth of interstitial connective tissue in which fat is often deposited and which is accompanied by a progressive wasting of the muscular fibers. As to etiology we know that males furnish the majority of the cases, the disease being transmitted by the mother who does not become affected by it. The disease always manifests itself during a period of development, sometimes in the early stage of growth, often during mid childhood, rarely not until growth is nearly ended. Recent studies have indicated that there is primarily a derangement of the metabolism of the muscle. These investigations are still under way and may give a clue to the rational treatment of the condition. The treatment at present aims to increase elements which studies have indicated to be present in deficient quantity in the diseased muscle.

A presentation of the two cases now under our observation follows:

The father and mother of the patients are both in good health. Two maternal uncles died at the age of 24 who were unable to walk and had to go about in wheel chairs. While no definite information concerning their condition is obtainable, it is suspected that they suffered from a condition similar to that of the patients we are studying. A younger brother, 4 years of age, is in good health and at present shows no signs of muscular dysfunction.

The sister, 15 years of age, was admitted to the observation clinic of the Delaware State Hospital with a complaint of difficulty in walking. The mother states that when the child was 10 years of age it was noted that she frequently fell while playing. This tendency to fall increased and difficulty in walking was also noticed. The difficulty in walking and the tendency to fall gradually grew worse and finally the girl was unable to arise from a sitting position in a chair. She is still able to walk, but it is difficult for her to turn around. If she falls she regains an erect posture by climbing up her legs with her hands. In going up stairs she has to take one step at a time. The mother noticed that the calves of her legs had grown larger and that she had begun to lose weight. During the year previous to admission her condition has not progressed noticeably. In the past medical history it is noted that the patient's gestation and birth were normal. She was breast fed, was a healthy baby and appeared to develop normally. She began to walk and to talk at the usual age. Mental development was apparently normal. At the age of 12 she was removed from school on the advice of her physician because of her difficulty in walking. Her health in the past has been generally good. She had measles at 7 years of age, whooping cough at the age of 10. Her muscular trouble began to manifest itself before the onset of whooping cough. She had a tonsillectomy at the age of 10 with the hope of improving her condition. There was, however, no beneficial result. Menses began at the age of 12 and menstrual periods have been regular. Physical examination reveals a 15-year-old girl of athletic skeletal type in a state of good nutrition. The heart shows slight displacement to the left with some irregularity in rhythm but no evidence of decompensation. Blood pressure is 115/80. Gastro-intestinal and genito-urinary systems are negative. The endocrine system is apparently negative. The outstanding symptoms are presented by the neuro-muscular systems. We find atrophy of the shoulder girdle and pelvic girdle groups of muscles with dystrophic enlargement and hardness of the muscles of the calves and of the extensor muscles of the forearm. Functionally, there is astasia, with limitation of walking, turning around, stooping, and elevation and motion of both upper and lower extremities in various directions. The gait is of a peculiar waddling type in which the body is so inclined as to bring the center of gravity over each foot on which the patient successively throws her weight. In rising from the floor the patient first rises on all fours by extending knees and elbows. She then places her hands on her knees and alternately placing her hands higher and higher up her thighs gradually rises to an erect position. When standing there is fairly marked lordosis. X-ray examinations of skull and teeth reveal nothing of pathological significance. Eye grounds and vision are normal. Nose and throat examinations are essentially negative. Basal metabolic rate is plus 2. The Wassermann reaction is negative in both blood and spinal fluid. Blood chemistry is normal.

The brother, 10 years of age, was admitted to the observation clinic with complaint similar to that of the sister. When the patient was about 7 years of age the mother noticed that he would hold his legs with both hands when going up or down stairs. At about this time and subsequently it was also noticed that he would fall more frequently than a normal child when running and playing. The parents noticed enlargement of the calves and a decrease in size of the thighs and upper arms. Gestation and birth were normal. Patient was bottle fed, but was apparently a healthy child. He began to walk and talk at the usual age. He has suffered from recurrent attacks of furunculosis during the past three years. He advanced normally in school until removed on the advice of a physician upon completing the 4th grade. Physical examination reveals a slender, poorly nourished boy, showing evidence of atrophy of the muscles of the shoulder girdle, pelvic girdle, upper arms and thighs. There is moderate enlargement of cervical axillary and inguinal lymph glands. Several carious teeth are present. Tonsils are enlarged and cryptic. The chest is asymmetrical, the left costal margins being more prominent than the right. The heart is normal in size and functionally negative except for sinus arrhythmia. Blood pressure is 110/60. In examining the neuro-muscular systems it is noted that pseudo-hypertrophy is present in this case only in the calf muscles. Muscles of the thighs and of the upper arms show advanced atrophy with functional weakness. The deltoids are markedly atrophied, but retain function sufficient to raise the arms above the head. The muscles of the forearm show less atrophy and have retained function to a greater degree than other muscles of the body. The gait, station and method of rising from the floor in this case are similar to those of the sister. Urine examination is negative. Blood and spinal fluid Wassermann reactions negative. Blood picture is normal. Other spinal fluid findings are negative.

The history of the occurrence of a probably similar condition in male members of the maternal side of the family, the age of onset in these two patients, the typical development with atrophy, pseudo-hypertrophy, progressive loss of function, characteristic gait, station, and method of rising from the floor are sufficient evidence for a diagnosis in these two cases of pseudo-hypertrophic muscular dystrophy.

PAIN RESPONSES IN PSYCHOTIC PATIENTS

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Practically every physician has had contact with the so-called neurotic patient, whose vague pains and aches can not be explained on the basis of physical or laboratory findings. In some of these patients the complaint has even been so persistent as to cause the surgeon to operate, only to be confronted by a total lack of pathology. In direct contrast to this exaggeration of physical discomfort or this reflection of mental illness in physical pain are the cases of hysteria that can stand pain and even deliberately inflict it on themselves without showing any of the normal pain reactions. In this respect hysteria is not unique. We find other types of psychoses in which the reaction to pain is absent, or at least markedly diminished. Along with the reduced pain reaction is frequently found an absence of other subjective symptoms. Three cases are here presented in which physical findings and autopsy revealed sufficient pathology to warrant manifestations of pain, which were lacking:

Case 1. (Hospital Record 703). A young Italian woman, admitted to the Delaware State Hospital, August 10, 1921, at the age of 34, and diagnosed dementia praecox, hebephrenic type. Her mental picture was one of sadness and preoccupation, but many times she was seen to smile and laugh to herself without apparent cause. She was impulsive, abusive, and antagonistic. At times she was destructive and assaultive. A complete mental examination was made difficult in this case owing to the language difficulty. At times she assumed catatonic attitudes, and was mute and negativistic.

A physical examination in 1927 was negative except for under-nourishment and roughened breath sounds over the left apex. In 1933, during the course of a series of routine physical examinations the patient was found to be markedly underweight. There was a muco-purulent discharge from the nose, and the gums were spongy and bleeding. Bony markings were prominent. Both supra and infraclavicular fossae were deepened. Chest expansion was poor, respirations were shallow, and resonance was diminished over both upper lobes. There was flatness distal to the angle of the scapula. The patient's respirations were so shallow that breath sounds were scarcely perceptible, but expiration seemed to be prolonged and harsh, and there were occasional fine crepitant rales in both apices. There was a loose, infrequent cough which consisted of scarcely more than a clearing of the throat. The heart was small, and the sounds were of poor muscular quality. The abdomen was negative. Hands and feet were cold and cyanotic. Reflexes were diminished bilaterally. Urinalysis showed traces of albumin and many leukocytes. Hemoglobin 65-70% (Tallqvist); RBC, 3,400,000; WBC, 6,500. Blood and spinal Wassermann negative. Roentgenological examination of the chest, March 1, 1933, showed pulmonary tuberculosis of both lungs, with cavity formation in both apices, and partial collapse of the lower right lobe. Of ten sputum examinations, one was positive for tubercle bacilli. The temperature varied from 96 axillary, to 98.6 axillary, usually reaching its maximum at 4 P. M. There was a tachycardia of about 100-120 a minute. In spite of a high caloric diet and rest in bed, the patient steadily lost in weight and strength, and the afternoon temperature on occasions was elevated to 100 axillary. On July 7, 1933, about three and one-half months after the condition had been diagnosed, the patient expired.

Autopsy — The left pupil measured 0.3 cm, the right pupil was 0.5 cm. On opening the chest, many fibrous adhesions were found on both sides, particularly in the apices. There was no free fluid. Both lungs were irregularly roughened with fibrous tags. On section, the left lung presented a large, irregular cavity lined with fibrous strands, and containing a grayish-brown purulent material. A small cavity of similar nature was present in the right upper lobe. Elsewhere the lungs presented scattered collections of grayish tubercles and caseous masses up to 3 cm in diameter. Very little functioning lung tissue was present. The lymphoid tissue of the terminal ileum was thickened and presented numerous irregular indurated ulcers, many of which tended to encircle the gut. Many ulcers of a similar nature were present in the cecum and ascending colon.

Microscopic sections of the lung showed numerous caseous, necrotic foci surrounded by poorly formed scar tissue and large mononuclear cells. Occasional giant cells were present. The liver and spleen showed microscopic tubercles. Microscopic examination of an ulcer from the ileum showed the mucosa to be interrupted by the ulcer, which extended into the muscularis. Its base was covered with poorly formed granulation tissue containing numerous tubercles and a superficial polymorphonuclear exudate. Permission was not obtained for examination of the brain.

In this case, although there was extensive involvement of the pleura which gave evidence of an old pleurisy, as well as a partial collapse of the right lung, there was never any sign of subjective discomfort. The cough was infrequent and when the patient did cough she showed no signs of pain. The face remained placid and indifferent throughout the course of the illness, and there had been no sign of physical disability except that for several months preceding the diagnosis of tuberculosis she had been quieter than usual and less given to assaultiveness and destructiveness. There were no symptoms referable to the G. I. tract, in spite of the rather extensive ulcerations present in the ileum, and on palpation no signs of abdominal pain or tenderness could be elicited.

Case 2. (Hospital Record 3,936). A colored woman, admitted September 14, 1923, at the age of 34, with a history of weakmindedness since childhood and of epileptic seizures of unknown duration. At the time of admission she showed a right-sided spastic paralysis, concerning the duration of which there was no available data except that she had had a severe illness in childhood which had left one leg shorter than the other.

The mental picture was one of confusion and incoherence. There was a tendency to verbigeration. At times she was assaultive and violent, but was usually apathetic and indifferent. She frequently suffered from delusions of persecution. Seizures of an epileptic nature occurred about once or twice a month. A diagnosis of epileptic psychosis was made.

Physical examination performed in 1929 showed a facial asymmetry, the face being drawn to the right. There was bilateral exophthalmos. The thyroid gland was normal in size. The cardiac findings were negative. The lungs were negative, both physically and roentgenologically. The right upper extremity was spastic and there was atrophy of the muscles of the shoulder. The right foot was also spastic and held in a position of eversion. Tendon reflexes in both upper and lower right extremities were hyperactive. A physical examination performed in 1933, at the time of her last illness, showed essentially the same picture, except that the right eyeball protruded more than the left. Breath sounds were distant and scarcely perceptible. There was no cough. The heart showed a soft systolic mitral murmur, not transmitted. In addition to hyperactive reflexes there was now a right positive Babinski. Urinalyses were negative. Blood Wassermann negative. Blood count showed 90% hemoglobin (Tallqvist); RBC, 4,620,000; and WBC, 7,900.

In June, 1933, it was noticed that the patient was getting very weak and seemed unable to get around. On August 18, 1933, she had a temperature of 100.4 axillary. Prolonged questioning failed to elicit any complaints. The temperature ran an irregular course, varying from 98 axillary in the morning to about 102 axillary in the afternoon. There was a tachycardia and respirations were rapid. At no time were there any complaints. On September 7, 1933, she expired.

Autopsy — There were dense pleural adhesions over both apices which presented numerous irregular, firm nodules composed of large amounts of scar tissue enclosing numerous small cavities. In the surrounding lung tissue were many groups of firm yellow lesions interpreted as tubercles. The same condition was present in the lower lobes. The hilus lymph nodes were moderately enlarged and showed caseous degeneration. A few irregular ulcerations were present in the terminal ileum.

The brain showed softening over the left occipito-parietal region, in which area the gyri were distinctly flattened. On section the ventricles were moderately dilated and there was a communication between the left lateral ventricle and an irregular cavity in the surrounding brain tissue. Posterior to the fissure of Rolando the left hemisphere presented a soft, ragged mass involving the basal ganglia in this region and a portion of the internal capsule. In the occipital lobe the cavity contained a hemorrhagic mass attached to the brain substance and containing blood and translucent grayish tissue.

Microscopic examination of the lungs showed discreet and confluent tubercles undergoing caseation necrosis. Lesions of a similar nature were found in the liver. The intestinal ulcers extended through the mucosa into the muscularis, and their bases were formed by an exudate of polymorphonuclear leukocytes and necrotic material. A few giant cells had infiltrated the surrounding tissue.

Microscopic examinations of the left occipito-parietal region of the brain showed masses of small cells with bipolar cytoplasmic processes. The nuclei were small, round, and rich in chromatin. There were numerous blood vessels present. Portions of the tumor were necrotic and gave evidence of old and recent hemorrhage. A diagnosis of fibrillary astrocytoma was made.

In spite of the extensive cerebral involvement in this case, and the extensive lung pathology, the only subjective complaints were of pain in the left leg, which was negative to physical examination. There were never any complaints of headache or of visual disturbances, and no gastro-intestinal symptoms, which we would expect to be present not only because of the brain tumor but because of the tuberculous ulcerations in the ileum. At no time was there any cough or other evidence of intrapleural disease except a rather rapid respiratory rate.

Case 3. (Hospital Record 340). A white male admitted to the Delaware State Hospital, September 15, 1891, at the age of 24. He was very noisy and quarrelsome. His efforts at speech were unintelligible. He was incontinent, and his reactions in general were childish. There was a history of weakmindedness since childhood. A diagnosis of mental deficiency, imbecility, was made.

A physical examination made April 13, 1933, showed a small, white, restless, suspicious and uncooperative male patient about 56 years of age. The skin showed a waxy pallor. There was a tachycardia and an occasional extra systole. A2 was accentuated. The brachial arteries were sclerosed and tortuous. Radial arterial walls were palpable and the pulse was just compressible. Blood pressure was 148/80. The chest showed deepening of the supra- and infraclavicular fossae bilaterally. Expansion was poor but equal. Resonance was somewhat diminished. There were no rales. Abdominal examination was negative. Examination of the external genitals in 1927 was negative. Examination of the nervous system was negative. Urinalyses and blood and spinal fluid Wassermann negative. Blood count showed hemoglobin 95% (Tallqvist); RBC, 4,750,000; WBC, 7,800.

This patient's physical condition continued satisfactory until January 26, 1934, when it was noticed by the attendant that he did not eat his dinner with his usual relish. After dinner he was more inactive than usual and his temperature was found to be 99. At supper time his appetite was still poor. At about this time he was seen by the physician. As no subjective signs could be obtained from the patient, the throat, lungs and abdomen were examined in succession and were found negative, except for a moderate degree of abdominal distention and diminished peristaltic activity. Temperatures taken every two hours during the night were normal. In the morning the patient drank a cup of cocoa for his breakfast, but refused everything else. Since his temperature was normal, and there was no physical evidence of ill health and no complaints, it was decided to get him out of bed. While he was being dressed the attendant noticed that he had become cyanotic and dyspneic. He was quickly put back to bed, but before the physician could reach the ward he had expired.

Autopsy — Positive findings were as follows: Left pupil, 0.6 cm in diameter; right pupil, 0.3 cm. Abdomen distended. Small left inguinal hernia. On opening the peritoneal cavity the surfaces were found to be injected and covered with flakes of fibrin. About 25 cc. of turbid fluid were present in the pelvic cavity. The left internal inguinal ring presented an opening about 2 cm in diameter through which had herniated and become incarcerated a loop of sigmoid, firmly bound down by dense fibrous adhesions, and showing at one point necrosis and perforation. There was distention of the gut proximal to the point of incarceration. The left pleura showed dense fibrous adhesions in the region of the apex. The right pleural cavity was completely obliterated by fibrous adhesions. The gall bladder was thickened, smaller than normal, and completely filled with small, faceted stones. The kidneys were smaller than normal and gave evidence of nephrosclerosis. The brain weighed 1,000 gms, and was of normal shape and contour. The gyri were of normal shape, and there was no evidence of flattening. The cortex was thin and the ventricles were moderately dilated. Microscopic sections from the cerebral cortex showed a rather small number of ganglion cells and a slight increase in glia cells.

Here we have a case of incarcerated inguinal hernia with necrosis and perforation of the gut, in which not a single classical symptom except moderate distention, was present. On only one occasion was the temperature elevated, and then only to a moderate degree. There was no rigidity, and apparently no pain, nausea, or vomiting.

Definite conclusions concerning pain responses among psychotic patients cannot be drawn from a review of only three cases. However, recent experimenters have called attention to the fact that there is not only an apparent but an actual diminution of response to painful stimuli among certain groups of mental patients. The question is: Do certain psychotic patients actually feel pain to the extent that the normal individual does, or is their lack of response due to their desire to ignore the painful stimulus?

If the latter is so, is it sufficient to explain the lack of various other subjective symptoms, such as nausea, vomiting, and lack of muscular rigidity? At the present time it seems that the condition is due to an actual diminution in pain perception.

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INTRACRANIAL TUMORS

Douglas M. Gay, M. D.*
and Marion L. H. Freeman**

There are three main groups of primary intracranial tumors, the meningeal, the gliomatous, and the glandular, which are further classified according to their cell origin. Secondary tumors occur in the cranial cavity by direct extension from the skull, face, eye, mouth or nasal passages, as well as from the ethmoid and frontal sinuses, or they may represent metastatic growths from primary sites in any part of the body.

The meningiomas, arising from the pia arachnoid or dura, form a well defined group of connective tissue tumors. They produce symptoms by pressure without actually invading the brain, and have a tendency to extend into the overlying bone. They are amenable to surgical treatment, as is illustrated by Observation Clinic case 71, whose symptoms of terrific headache were entirely relieved by the surgical removal of a meningioma located in the right fronto-parietal region and overlying bone.

The gliomas, tumors of brain tissue proper, constitute about 40% of a series of verified intracranial tumors reported by Dr. Cushing. They vary greatly in their characteristics and for practical purposes may be simply classified on the basis of their cell origin. It is important to distinguish between the slow-growing fibrillary astrocytoma which is frequently removed surgically with success and the types which, because of their rapid growth and tendency to extend into the surrounding tissues, are not amenable to surgical intervention. Examples of the relative growth characteristics of extreme cases are found in the records at Farnhurst. Delaware State Hospital case 3936 presented gradually increasing symp-

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*Pathologist, Delaware State Hospital. **Secretary-technician of Tumor Clinics.

toms of psychosis and epileptiform seizures for about twenty years, and died of tuberculosis. Autopsy revealed an unsuspected fibrillary astrocytoma of the left occipito-parietal region which gave microscopic evidence of long duration. Observation Clinic case 28, with rapidly increasing symptoms of mental deterioration, died seven months following the onset of symptoms and showed at autopsy a rapidly growing spongioblastoma.

The glandular tumors arise from the pituitary, pineal, ependyma and choroid plexus. The majority are adenomas of the pituitary and are usually associated with dramatic bodily changes, such as gigantism and acromegaly, resulting from disturbed endocrine function. Hemianopsia, abnormalities of the optic discs and roentgenological evidence of enlarged sella turcica are frequent symptoms, as in Delaware State Hospital case 5914. Pituitary adenomas are approachable through the nasal or supra-orbital route, with a fair chance of cure.

Tumors of the pineal may be cystic or solid adenomatous masses, and usually produce marked secondary effects upon the brain by obstruction of the aqueduct.

The tumors of the ependyma and choroid plexus are usually papillary, and also produce symptoms by obstruction of the interventricular communication.

The symptoms of metastatic intracranial tumors do not differ from those of primary tumors, but the initial lesion is usually sufficiently obvious to suggest the correct diagnosis. This is illustrated by Delaware State Hospital case 4780, in which amputation of the breast for carcinoma was followed eleven years later by metastasis to the brain.

The general symptoms of intracranial tumor are headache, tenderness, choked disc, nausea and vomiting, abducens nerve paralysis, convulsions, dizziness, bradycardia, static or cerebellar ataxia, paresis of limbs, and mental changes. An increased cerebrospinal fluid pressure as demonstrated by manometer readings on lumbar or cisterna puncture is an important sign. Ventricular puncture for the diagnosis of ventricular tumors gives valuable assistance, but is occasionally complicated by puncture into a cyst cavity, such as is often found in slow growing astrocytomas, in which a xanthochromic fluid is present. This, however, is easily differentiated by the presence of clear fluid from the lumbar puncture.

Evidence from various neuro-surgical clinics proves the value of surgery in some types of intracranial tumors. The highly commendable investigations of the effects of irradiation on intracranial tumors are as yet inconclusive.

War Debts and Cancer

The need for more radium in this country has been recognized by some members of the United States Congress, with the result that bills have recently been introduced in the House of Representatives and the Senate to permit the acceptance of $10,000,000 worth of radium as part payment of the Belgian war debt, which exceeds $411,000,000. These bills have been referred to committees, but no hearings have been held on them.

This amount of radium, which could be loaned to hospitals throughout the country, would be of unlimited assistance in combatting the ever-increasing cancer death rate.

Will you not write to the sponsors of these bills, Senator James J. Davis, referring to bill S 2985, and to Congressman James J. Connolly, referring to bill H. R. 7661, also to your Congressman and Senators, urging their support in this excellent project? Congress will probably adjourn about June 1st, so please write promptly, addressing your letters to the above at Washington, D. C.

Outing

The New Castle County Medical Society will hold its annual Spring outing on Tuesday, June 19th, 1934, any time after half-past one Daylight Saving Time, on the grounds of the Delaware State Hospital at Farnhurst, telephone 4368.

Members are urged to come and have some fun. There will be different games, such as baseball, tennis, horseshoes, and others. Good eats. Plenty of excitement and surprises. Come and enjoy yourself.

EDITORIAL

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CRIME

In the last few years the public has been quite exercised about the outcome of the persistent defiance of large organized groups of men and women who have discarded all of the legal and moral issues of the majority of the people; groups of confirmed egoists who recognize no rights of others but consider alone their own selfish personalities. It is indeed a disgrace that our state and Federal governments are unable to cope with this ever-growing and alarming situation. Highway and bank robberies are daily occurrences, while kidnapping has become a frequent adjunct to our life. One needs only to glance at the newspapers to realize the truth of such statements. It is, indeed, a known fact that crime has increased tremendously in the last decade and a half, changing somewhat in its type — starting with bootlegging, progressing to racketeering, and now majoring in kidnapping.

It is rather obvious that with the establishment of the prohibition law or the eighteenth amendment the government instituted a new policy in this country, unconsciously it is true, for the public became actively defiant toward one law and helped the so-called bootleggers to become one of the most powerful organizations in this country.

There is no question that the criminals have a "brain trust," because such organizations must be led by minds which are superior intellectually, minds which could have, had they been directed properly, been of great value to the community.

The psychiatrists believe that the minds of criminal organizations are undoubtedly those who have never been able to obtain satisfaction of their egos by any means socially correct and in accord with the laws of the people. These people with superior minds have been misunderstood, unaccepted in society, or have been inherently psychopathic in their general makeup. We are not referring in these instances to financial leaders who, through the abnormal situations set up by the inflation of the post-war years and who for personal gain, have committed crimes which have harmed many. These actions, criminal as they were, were based on the fact that the individuals involved felt that they could obtain marked financial gain without serious injury to others. The types which we are discussing find no means of satisfying their egos, and have turned to the organization of crime, in which they may rule supreme over a group of morons or low-grade individuals, individuals who readily follow and in a child-like emotional state worship their leaders as heroes and give them loyalty which even death cannot break. It seems impossible, physically and psychologically, to cure these advanced minds of gangdom. Should society wish to rid itself of them they must never be permitted to remain at large at any time. Laws should be so evolved that they cannot escape their just punishment through technicalities. The under-members of such organizations should be institutionalized and an attempt made to rehabilitate them. However, continual supervision would be essential.

Primarily, we are interested in the prevention of crime. Homes and schools are the places in which to find the children who show abnormal tendencies, children who are not accepting the situations of life as they exist at any time, and who are defiant to the home and school authorities. They should be carefully studied and their lives should be adjusted before they reach the age of eighteen years. Some means should be given to them so that they might obtain satisfaction of their own personalities, as they live under a constant spirit of rebellion.

The medical profession has created a tremendous feeling toward preventive medicine, with the result that there is a marked decrease in certain physical illnesses. It would surely seem that, with the co-operation of the bar association and educators, an equal feeling might be created in regard to crime. We are hoping that the members of the medical profession, in dealing with the behavior cases which they meet constantly in their practices, will strive to correct such situations as they arise. The medical men should train themselves to recognize abnormalities in personalities, environmental defects, and early deviations from the normal, so that adjustments can be made. They should broaden their field and think not only of physical illnesses. Since the physician is the one professional man who has an intimate contact with humanity, he, of all people, is accepted as a confidant of parents, and as such has a tremendous advantage in helping the adjustments of children. Whether criminals are born or not is still a debated question, but even were it true that some were born, it would seem undoubtedly that the majority are the product of their environment, and in such cases adjustment is possible.

A. M. A. CONVENTION

The eighty-fifth annual session of the A. M. A. will be held in Cleveland, June 11-15, 1934. The House of Delegates will convene at 10 A. M. Monday, June 11, at the Hotel Statler. Delaware's delegate is Dr. James Beebe, of Lewes; Dr. C. E. Wagner, of Wilmington, is the alternate. Discussions of unusual importance, especially concerning medical economics, are on the agenda of the House.

The Scientific Assembly will open with the general scientific meeting at 2 P. M. Monday, June 11. The installation of President-elect Walter L. Bierring, of Des Moines, Iowa, will take place at 8 P. M. Tuesday, June 12. The sections will begin their meetings at 9 A. M. Wednesday, June 13. All meetings, except those of the House of Delegates, will be held in the magnificent Cleveland Public Auditorium. The complete program will be found in the Journal of the A. M. A. for May 12, 1934.

Delaware physicians and their families and friends are urged to attend this, the largest scientific convention in the world. There is a special interest this year for Diamond Staters, in that Mrs. Robert W. Tomlinson, of Wilmington, will be installed as the National President of the Woman's Auxiliary.

THE RELIABILITY OF THE I. Q. IN CLINICAL WORK

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Before any real progress could take place in the understanding of mental subnormality a radical change had to be made in the prevailing conception of the distribution of intelligence within the population. The concept of intellectual types had to give way to that of degrees of intelligence. The conception of three discrete kinds of intellect—feeble-mindedness, normalcy, and genius—had to be supplanted by the conception of a continuous gradation of intellects ranging from that of the lowest idiot up through that of the greatest genius, with the bulk hovering around the mid-point of the distribution. The change of concept is of extreme importance for education and mental hygiene, for it points to the now obvious fact that there are those who, while not definitely feeble-minded, are very seriously retarded mentally, and consequently present problems similar to, though perhaps less intense in some cases than, the actually feeble-minded. But such a concept, while of tremendous theoretical importance, can be of little practical value without some means of measuring the varying degrees of intelligence. It is in the development of quantitative methods of measuring intelligence that psychology has made one of its most significant and valuable practical contributions to the fields of education and psychopathology.

To define adequately so abstract a concept as intelligence is indeed difficult, if not impossible. Fortunately, it is not necessary that a phenomenon be definable in order to be subject to measurement. For example, physicists have been successful in making precise measurements of electricity without knowing exactly what it is; and the measurements have made possible manifold practical applications. Definitions of intelligence have been variously attempted as follows: "Intelligence is a general capacity of an individual consciously to adjust his thinking to new requirements." (Stern)—Intelligence is "—the relative general efficiency of mind measured under similar conditions of knowledge, interests and habituations." (Ballard). "Intelligence means precisely the property of so re-combining our behavior patterns as to act better in novel situations." (Wells)

It will be seen that none of the definitions identify intelligence with the mere possession of knowledge. Rather, they identify it with the ability to apply one's knowledge satisfactorily in a *new* situation — to solve problems. Happily, problems can be graded in difficulty, and it was by means of combining problems into scales of difficulty from simple to complex that intelligence tests were developed. The scales were tried out on large numbers of school children to determine how many of the problems or subtests the *average* child at each age could pass successfully. Thus, if six-year-old children, on the average, passed a given number of tests, the successful passing of this number of tests was taken as the standard for the six-year *mental age*. In the same way standards for other mental ages were established, and were established not only for successive years, but for fractions of years as well. But, of course, not all children obtained mental ages commensurate with their chronological ones. Some, the brighter ones, passed more of the tests than did the average of their age, and thus obtained mental ages above their chronological ones; others, the duller ones, passed fewer tests and consequently obtained mental ages below their chronological ones.

This discrepancy between mental and chronological age gave rise to the concept of the intelligence quotient, or I. Q., as it is customarily abbreviated, which is simply the mental age divided by the chronological age and multiplied by 100 for the sake of eliminating decimals. Thus, if a six-year-old child is found to have a mental age of six years, his I. Q. will be 100; if he is found to have a mental age of nine years, his I. Q. will be 150; and if he is found to have a mental age of four and a half years, it will be 75. Ordinarily an I. Q. of below 70 is considered indicative of feeble-mindedness.

It has been found that the I. Q. remains fairly constant in most cases. For example, if a child of six years has a mental age of three years, he will most likely have a mental age of five years when he reaches a chronological age of ten, and a mental age of seven and one-half years when he reaches a chronological age of fifteen; at all three of these chronological ages his I. Q. would have been 50, and he would be considered definitely feeble-minded.

By far the most widely used individual mental test is the Stanford-Binet scale, a scale standardized on some 2200 school children. This test, together with other auxiliary ones, has been in constant usage in the mental hygiene clinic of the Delaware State Hospital since the clinic was established in 1929. The present article is concerned with the reliability of this test as a measuring instrument for clinical work, that is, it is concerned with the extent to which two I. Q.'s obtained by means of the Stanford-Binet scale at different times on a given individual agree with one another.

For this study, the I. Q.'s obtained on the test and re-test of 100 clinical patients were compared. Only the records of white male patients between the ages of five and twelve years were used, and no case was used in which the interval between the original test and re-test had not been at least one year. With these restrictions, the 100 cases were taken at random from the clinic files.

The average difference in I. Q. between the two tests was found to be 6.19 points. This difference is somewhat greater than that of 4.5 points found by L. M. Terman, *The Intelligence of School Children*, 1919, in normals. However, the discrepancy between the two sets of results is to be expected, for clinical cases would naturally vary more than normal ones. While the average difference was found to be 6.19 points, a difference of 10 or more points was found in only 22 per cent of the cases, and one as great as 15 points in but 6 per cent. These differences, of course, were not consistently in any one direction; some times the second I. Q. was higher than the first; sometimes, lower.

Another way of expressing the degree of relationship between the two tests is in terms of the "correlation coefficient." Correlation coefficients range from 1.00 to -1.00, the former representing perfect agreement and the latter perfect disagreement. What is meant by perfect agreement is that the rank order on the two tests is the same, that is, the highest on one will also be the highest on the other, etc. Perfect disagreement, of course, is just the reverse, that is, the highest on one will be the lowest on the other, etc. A correlation of .00 indicates a complete absence of relationship, such as one would expect to find between people's heights and the magnitude of their telephone numbers. In the present study the coefficient of correlation between the I. Q.'s obtained on the two tests was found to be .90, indicating a 90% agreement. The probable error of this coefficient is .01, which indicates that if a correlation were run on another group of 100 clinical cases, there is one chance out of two that the coefficient would fall between .89 and .91, and that there is less than one chance out of a thousand that such a correlation would fall outside the range .85-.95. It must be borne in mind that while there is a correlation of .90 between test and re-test, this does not represent the correlation between the test results and the capacity which they measure. Since tests and re-tests are supposedly equally fallible (any measuring device is to some extent fallible), one would expect either test to correlate *more highly* with the capacity which it measures than with the other test. If a correction for the fallibility of the two tests is made, so that only the fallibility of one test is allowed to influence the results, the correlation between either test and the mental capacity which it measures becomes .95. This is indeed a high degree of relationship.

One might object that it is only natural for an individual who has obtained a high score on the test the first time to obtain one the second time, because it is the same test. But, as a matter of fact, it is not the same test in anything but a very literal sense, because the Stanford-Binet test is actually a series of many sub-tests scaled in order of difficulty. In order for an individual to obtain the same score on the second test as he did on the first, he must not only pass all the tests which he passed the first time, but must pass some more tests in addition. For example, if a seven-year-old child passes the scale at the seven-year level his I. Q. will be 100. Now, if he is re-tested again when he is eight years old and passes exactly the same sub-tests as he did before, his I. Q. will fall to 88. In order for him to retain the I. Q. of 100 he must pass a sufficient number of additional tests to bring him up to the eight-year level. It will be seen, therefore, that the child is not merely passing the same tests over again, but is passing new and unfamiliar tests also.

In summary, the Stanford-Binet I. Q.'s of 100 male clinic patients between the ages of five and twelve years were compared with subsequent Stanford-Binet I. Q.'s obtained on the same patients after an interval of a year or more. The average discrepancy between a patient's first and second I. Q. was found to be 6.19 points, and only 6 per cent of the cases gave a discrepancy of as much as 15.0 points. The coefficient of correlation between the two tests was found to be .90, and when this value was corrected for attenuation it was estimated that the correlation between the Stanford-Binet tests and the mental capacity which it measures is approximately .95. The results therefore seem to warrant the conclusion that the test is extremely reliable, and constitutes a valuable instrument for clinical use.

THIRTY-NINE CASES OF READING DISABILITY

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The first case of reading disability discovered by the mental hygiene clinic in its state-wide examination of school children was an alert boy of twelve years. This boy, whose I. Q. was 95, was found among a class of mentally retarded boys. He had been placed with this group because, after six years of public school instruction, he had failed to attain third grade reading ability. From that time, October, 1931, to March, 1934, there have been thirty-nine children examined by the clinic, whose special diagnostic reading tests have revealed a definite and specialized reading disability. Grouped according to the year in which they were examined, these cases are as follows:

	White Male	White Female	Col. Male	Col. Female
Examined before July, 1932	2	0	0	0
Examined from July, 1932, to July, 1933	18	6	1	0
Examined from July, 1933, to March, 1934	12	0	0	0
Total	32	6	1	0

During the year July, 1932, to July, 1933, the mental hygiene clinic examined a total of 828 school children. Considering only the twenty-five reading disability cases discovered during this period, we find that reading disability occurs in about three per cent of the children examined by the clinic. In addition to the thirty-nine cases of definite reading disability, there was a group of seven children (five white boys, one colored boy, and one white girl) who, during the period from July, 1932, to March, 1934, were suspected of having reading disabilities, but on being tested did not fulfill the mental hygiene clinic criteria of definite reading disability cases, viz: retardation in reading, as discovered by standardized tests, of a year below their mental age. School grade and arithmetical age are also considered before the classification is made.

Our thirty-nine cases of reading disability, when grouped according to range of chronological age, mental age, I. Q., school grade, and average reading grade show the following:

Chronological Age		Mental Age		Intelligence Quotient	
7-0 to 8-0	5	7-0 to 8-0	14	70- 80	11
8-0 to 9-0	7	8-0 to 9-0	9	80- 90	10
9.0 to 10.0	7	9.0 to 10.0	8	90-100	14
10-0 to 11-0	5	10-0 to 11-0	3	100-110	3
11-0 to 12-0	4	11-0 to 12-0	4	110-120	1
12-0 to 13-0	5	12-0 to 13-0	1	Above 120	0
13-0 to 14-0	4	13-0 to 14-0	0		
14-0 to 15-0	1	14-0 to 15-0	0		
15-0 to 16-0	1	15-0 to 16-0	0		
Total	39	Total	39	Total	39

School Grade		Av. Reading Grade	
Special Class	7	Below 1.1 gr. or Non-readers	13
1st Grade	3	1.1 to 1.6 gr.	10
2nd "	5	1.6 to 2.0 gr.	4
3rd "	11	2.0 to 2.6 gr.	4
4th "	9	2.6 to 3.0 gr.	4
5th "	1	3.0 to 3.6 gr.	3
6th "	3	3.6 to 4.0 gr.	0
7th "	0	4.0 to 4.6 gr.	1
8th "	0	4.6 to 5.0 gr.	0
Total	39	Total	39

The mental ages and intelligence quotients were obtained by means of the Stanford-Binet test. Many of the children were also given the Arthur performance scale. The average reading grade was obtained by averaging the scores on the Haggerty or Monroe silent reading tests, the iota word test, and the Gray oral reading test, according to the instructions given in the Monroe diagnostic reading test. The psychologists of the mental hygiene clinic administered both the psychological tests and the Monroe diagnostic reading tests, the results of which, together with the Stanford achievement arithmetic test, constitute the basis for a diagnosis of reading disability.

The sources of referral of these cases were the public schools throughout the state, the Department of Special Education, social agencies, and private physicians.

The reasons for referral varied, but may be grouped as follows:

(1) Behavior problems.
(2) Strongly suspected mental deficiency.
(3) Poor reading.

(4) General scholastic retardation.

Group I

In the first group there were nine children presenting one or more behavior difficulties. The teachers asked assistance from the clinic in the understanding and handling of the children. The reading disability was discovered during the course of the psychological examination.

The problems for which the children were referred were:

Seclusiveness	2
Lying	2
Stealing	2
Quarrelsomeness	2
Enuresis	1
Incendiarism	1

During the psychiatric examination which followed the psychological, the following additional behavior abnormalities were found in these nine children:

Infantilism	1
Chorea or choreiform movements	2
Nervousness	1
Nail biting	2

Group II

In addition to the boy previously mentioned whose reading disability had been mistaken for general mental retardation, there were two other children strongly suspected by their teachers of being mentally defective, and referred to the clinic for that reason. Both of these children tested in the group of 90 to 100 I. Q. One of them, a girl, was found to be suffering from choreiform movements and from enuresis. She was accepted by the clinic for a period of special coaching by the Monroe methods. The other child, a boy when last contacted was still in a special class, where he was making little progress. His mother had declined the clinic's offer of special remedial instruction in reading. The third child in this group, the alert boy of twelve, was returned to the regular school grades. He has not been recently contacted, but was last reported as making satisfactory school progress.

Group III

Thirteen children were referred primarily or solely because of recognized poor reading. In the case of seven of this group, reading disability was the only problem found. Of the remaining six, the following additional problems were found:

Nervousness or neurotic child	2
Enuresis	2
Excessively introverted or seclusive personality	3

Group IV

In this group were seven children whose general scholastic retardation seemed to be primarily the result of a reading disability, uncomplicated by any behavior problem.

The remaining seven children of this group were not only handicapped by reading disability, but by the following factors which seemed to have some bearing upon their poor school adjustment:

Infantilism	1
Choreiform movements	1
Enuresis	1
Quarrelsomeness	1
Excessively introverted or seclusive personalities	3
Sleep walking	1
Traumatic personality	1
Nervousness	1

In three cases, destructive ante-natal influences were also listed as possible contributory factors.

Summarizing, we find that in this group of thirty-nine cases of reading disability, the following additional behavior problems occurred:

Seclusiveness or introversion	8
Lying	2
Stealing	2
Quarrelsomeness	3
Enuresis	4
Chorea or choreiform movements	3
Nervousness	4
Nail biting	2
Infantilism	2
Sleep walking	1
Traumatic personality	1

Some of the thirty-nine cases also presented the following abnormalities which have sometimes been found to have some bearing on the problem of reading disability:

Visual defect	9
Speech defect	7
Left-handedness	3
Ambidextrousness	3

Other physical problems of the thirty-nine cases were:

Low energy output	1
Swollen glands	1
Sinus trouble	1
Bad tonsils	6
Residuals of brain disease	2
Heart disease	1
Dental caries	6

Not all of the thirty-nine cases were given physical examinations by the clinic staff.

The ordinal position of the child in the family group has sometimes been considered as having some bearing on the child's reading disability. There has seemed a tendency for reading disability to occur less frequently in children who are the eldest or the only child in the family. Our thirty-nine cases were distributed as follows:

Eldest child	3
Only child	5
Youngest	12
Second child	3
Third child	2
Fourth child	1
Fifth child	1
Ninth child	1
Position unknown	11

Part II

Present Adjustment of the Reading Disability Cases

Recent clinic contact with all thirty-nine cases has not been made. Some have moved to another state. Others, whose only problem was a reading disability, were not in need of psychiatric nor social service treatment, and as the clinic was prepared to accept only a very limited number of cases for remedial training in reading, these children were not followed after a report of their reading disability had been sent to the source of referral. Still others were followed for a while, and when found to be adjusting satisfactorily, treatment and follow-up were discontinued.

Twenty-two of the thirty-nine cases, however, have been contacted more or less frequently during the past six months.

Group I

Three of the nine cases referred as behavior problems have had psychiatric treatment and five, including these three, have been followed by the clinic social service workers. Four of the children composing Group I were not considered actual behavior problems, and since the sending of the clinic findings and recommendations to the referring source these children have not been again brought to the clinic's attention.

Of the three cases receiving psychiatric treatment, two have shown improvement in their behavior. One boy has made remarkable improvement in social adjustment and in scholastic progress. His psychological rating has advanced from the 80 to 90 group to the 90 to 100 group. His reading has remained poor, but other subjects have improved and he is no longer considered a behavior problem. His teacher gives him what help she can and he is helped at home with his reading, but he has received no special training by the Monroe methods. One boy has been placed in a special class and has recently been accepted by the clinic for special instruction in reading by the Monroe methods. His behavior has shown improvement. One boy has remained a behavior problem and a scholastic problem. He is of normal intelligence, but is seriously retarded scholastically. He has received no help of any kind for his reading difficulty.

One boy has received special instruction in reading by the Monroe methods from the clinic. He has not received psychiatric treatment. His behavior has shown improvement, and school work, with the exception of reading, has been satisfactory. One boy has received neither psychiatric treatment nor special remedial instruction. He is still in a special class and is described by his teacher as infantile and a drawback to the other children in the class.

Group II

This group of three children has been previously discussed.

Group III

Eight of the thirteen children originally referred as poor readers have been followed. Four of them have presented no behavior problem, either at the time of referral or since. Two are in a special class. One has made average school progress, but is still retarded in reading. He was helped by the school, and they do not consider that he needs the special remedial instruction offered by the clinic. One child, a girl, has received special remedial instruction from the clinic by the Monroe methods.

Three of the behavior cases presented the same problem — tendency to seclusiveness or excessive introversion. All have shown good social adjustment at school, as reported in the clinic social service follow-up. Only one received psychiatric treatment, following which improvement was marked. All three have difficulty with reading, but two have managed to make average school progress. One has recently been accepted by the clinic for special remedial instruction by the Monroe methods. Two have been placed in a special class. The one enuretic of this group has shown improvement.

GROUP IV

Seven of the fourteen children composing Group IV have been followed. Only one of the seven originally presented no behavior problem and she has recently developed a sense of inferiority, based largely on inability to read. She has been recently accepted by the clinic for remedial instruction by the Monroe methods. One child has been given intensive remedial instruction by the clinic. She still presents the original problems of infantilism and nervousness. Her scholastic progress is poor, and reading is still her most serious drawback, though there has been steady improvement and gradual development of her ability to read. None of Group IV have received psychiatric treatment. All are apparently making good social adjustment and are causing no trouble in school. Four are in a special class. One is making satisfactory progress in the regular grades.

CONCLUSION

We have attempted nothing more than a presentation in summarized form of the clinic data concerning a group of cases bound together by the one problem of reading disability. No conclusions nor evaluations have been attempted.

Remedial training by the clinic was possible in but four cases, and in only one of these was it carried beyond a total of ten hours or still continued at the time of the present writing. The four cases recently accepted are of too recent date to make any statement regarding their progress possible. The four cases previously accepted all showed improvement, and one was sufficiently improved to make good progress in her regular grade. She is no longer considered a poor reader. One has managed to make fair school progress, though still noticeably slow in reading. Two have shown definite improvement, but the severity of the reading disability is such that improvement in reading is not yet sufficient for satisfactory work in their present grade.

COMMUNITY ADJUSTMENT OF MENTAL DEFECTIVES

AUDREY D. DENISTON
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One solution in the care of the mentally defective is institutionalization, but every social agency or clinic is faced with the fact that the applications for care are far in excess of the facilities the State has to offer. Institutional care, however, is not advocated nor is it necessarily desirable for the child who can be trained in the community to continue living there.

The mentally defective child, especially those in the lower levels of intelligence, is easily recognized. His difficulty can be met, at least when he is small, so long as he has parents who can care for him at home. As he grows older, however, there may be the problem of custodial care as well as training in simplified routine, which parents are many times not equipped to give.

With the higher type of defective, the problem is a more difficult one. In this group, the passive and subservient type does not ordinarily come in conflict with the law, and may develop into a good and useful citizen. With supervision he can make an adjustment in a lower level of society where the competition is lessened, and, when not too much is expected of him, he may make a living and remain happy. For the aggressive and delinquent type of defective, who is frequently getting into difficulty, training in an institution with custodial care is in many instances both logical and desirable.

In Delaware, a law was approved April 8, 1929, authorizing the establishment of a mental hygiene clinic under the direction and control of the Board of Trustees of the Delaware State Hospital: "It shall be the duty of the said clinic to examine all children within the State, attending any public or private schools, who are two or more years retarded, when so requested by the Superintendent or other Executive Head of such school. The said mental hygiene clinic shall likewise undertake and carry on a continuous survey and examination of all feeble-minded."

Of the five hundred seventy-seven school children examined the first year of the clinic, ending June 30, 1930, two hundred four were found to be feeble-minded; that is, by formal psychological examination, their intelligence quotients were seventy and below, according to the Stanford-Binet test. The consideration of defectives is, of course, only one phase of the clinic work, but it is not surprising that in the first sorting the slow moving child, the one who cannot keep up with his class, would be the first about whom his teacher would be concerned.

Many of these children have had the advantage of training in special and opportunity classes established in the public schools and are now either adjusting more or less satisfactorily there, or, if past school age, are getting along well in the community with a certain amount of supervision. Although actual supervision cannot be given or even attempted by the clinic, information has been secured at intervals either from parents, schools, or interested agencies indicating that the adjustment has been satisfactory or otherwise. Statistics showing more accurately the nature of adjustments of children examined and who have been in the community during the past four years are being completed.

The case of a fifteen-year-old Polish boy with a mental age of seven years, six months, and an I. Q. of fifty may illustrate one type of defective. He has lived and attended school in an urban community; in spite of his limitations intellectually he had personable qualities, was energetic and showed considerable interest in mechanical things. After leaving school, being excluded because of his age, he spent a great deal of time around machinery, either watching someone else work or helping to re-build an old car when asked to help. The family had been handicapped financially because of the unemployment of the father, but home conditions were considered good in that there was a strong family feeling. Because of this boy's desire to either work or go to school, the former being impossible, he was enrolled in an adult evening class where he learned some practical reading, such as traffic signals, names of streets, and simple business terms that were not included in the school curriculum in the lower grades—the last ones he attended. As a result of good family supervision, he has gotten along well and appears to be happy.

In contrast to the above, is a thirteen-year-old Italian boy with an I. Q. of sixty-nine who, in addition to being defective in intelligence, rating in the upper moron level, was erratic and unstable in temperament. He had been in court for stealing, had truanted from home, and was a constant source of trouble in school. Finally, when he did not respond to probation by the court, he was committed to the industrial school, where he continued to cause trouble by truanting, being destructive, and quarrelsome with other boys with whom he came in contact. This home also seemed to be an adequate one; the physical surroundings were good, and although there was a big family, the parents appeared to be interested in their children and gave them good treatment.

The present conditions of unemployment are difficult for those of adequate intelligence who would in ordinary times be employed; it is easily understood that it would be doubly difficult to find simple or routine work for a young boy with no experience and limited intelligence. Any available work for remuneration has been given in preference to the wage earner of a family.

Education of a practical nature during youth and adolescence is probably the most powerful factor in socializing the defective, but it is also important that some supervision and guidance be given after the school period, in order that the influence started there will not be wasted. "The success with which the problems of mental deficiency can be dealt with is said to depend on a twofold adaptation—of the defective to his environment, and of the environment to the defective. The number of the mentally defectives that can be safely left in the general community depends largely upon how much the community is prepared to do in giving them appropriate training when they are young, in finding occupations suited to their abilities, in safeguarding them from unequal competition with persons better endowed mentally and physically, and in ensuring for them adequate care, supervision, and control in their homes."*

REFERENCE

*Mental Deficiency in England. C. B. Hopkins, Social Service Review, 3, 630, December, 1929.

HISTORY OF SOCIAL WORK IN STATE HOSPITALS

ZILPHA GUILFOIL

Chief, Social Service Department, Delaware State Hospital

Social work in State hospitals for the insane was instituted before such work was introduced in other medical hospitals and centers, but, after its first inception, the interest lagged somewhat until the public's interest in mental disease was aroused by the Mental Hygiene Society.

Clifford Beer's book, "The Mind That Found Itself", which had brought about the formation of this society, showed clearly the need for more intensive work among patients in the State hospitals and did much to arouse public opinion, and medical minds also, to the need and importance of such work, and the Mental Hygiene Society has been largely instrumental in bringing about higher standards for such work. However, long before Clifford Beers had written of his experiences, there had been tentative attempts to introduce some sort of social procedure for mental patients.

The movement began in England when, in the latter part of the nineteenth century, officials of State hospitals became aware of their responsibility for the patient after he leaves the institutions. The work, however, when first started, was not broad in its viewpoint, and showed little conception of the complete and valuable service it could render both for the hospital and the patient, and was not concerned with the broader types of service which have since been evoked. In London in 1880, a society was organized known as the Society for the After-Care of Poor Patients, Discharged from State Hospitals. The duties of the workers appointed were to arrange after-care for those patients who were practically homeless, and to keep supervision over them during their period of adjustment to community life.

The formation of this work stimulated the United States to similar action, and New York State formed what was known as a "subcommittee on the after-care of discharged patients." Their work was conscientiously performed, and has been accepted as a forerunner of the after-care of discharged patients of today.

It was through the London organization that a larger, more influential association was formed in 1895 to operate in general medical hospitals. The first worker appointed was mainly called upon to investigate free cases and to check the abuse of medical charity. She and other workers who soon came to be appointed were known as Lady Almoners.

From the start their duties became enlarged from that of pure investigation, to a wider knowledge of social resources, and to the necessity of acquiring more training in methods of social work and to acquire skill in adjusting other difficulties in the patient's families besides purely economic ones. From this work, spreading over, as it did, from the State insane institutions to the other medical hospitals, was started the first movement towards modern hospital social work.

In 1906, Dr. Pittman of New York, secured a worker in his hospital who was a social worker of training and experience, and also insight. He gave her his personal instruction, and together they applied the interrelation of medicine and social work with understanding in mental disease.

The Massachusetts General Hospital was

the next to fall in line to employ a social worker in their neurological clinic. She had been trained under Dr. Pittman and his social worker, and brought a fine understanding and professional skill to her task.

There were other sporadic attempts to institute such work in mental hospitals, but no really concerted movement until 1912, when such work became classified as psychiatric social work.

Dr. E. E. Southard of Boston was an enthusiastic supporter of this work and did much to clarify the thinking in regard to it and in formulating principles involving the interrelations between psychiatry and social work. As a clearer understanding began to evolve regarding psychiatric social work, training schools began adding psychiatric social work courses to their curricula, one of the first being instituted at Smith College, which has continued to maintain the highest standards for workers who embrace the course. This recognition of psychiatric social work by the schools was quickly followed by a recognition from other social work organizations, and it was soon found to be important enough to include in conferences as a separate division.

With the importance of psychiatric social work being stressed, and, although the inception of the movement was in mental hospitals, for a long time social work in State hospitals was considered an unfavored branch of the profession. Strangely enough, before the advent of mental hygiene in the field, the opportunities for progressive, vital, humane and successful work were not considered possible within the walls of the hospital, and the supply of workers was inadequate to the demand. Even after the beginning of the mental hygiene organization and the introduction of psychiatric social work in the curricula of the training schools, the institutional work was considered less important and significant than the psychiatric field outside the hospital.

The hospitals, themselves, were largely to blame for this attitude of thought. Staffs were slow to grasp the significance of the work and the wide influence it would have upon their patients and upon the work of their hospitals. It has taken a period of education on the part of medical superintendents and the lay public as well to recognize that this work is vital and important, and this has largely been done by the larger centers demonstrating with their staffs of trained workers what such work can accomplish. Their task has been so well done and their efforts so well supported by the mental hygiene movement that the realization has become almost universal that no State hospital can function adequately without a social service department on its staff.

With the recognition that their work is important to the State hospitals, a higher class of trained social workers have been entering the field, and they, through their efficient work, have demonstrated the value and need of such work so that more and more State hospitals have fallen in line and have annexed a social worker or have built up a complete social service department.

These workers, often working in districts far removed from large cities with their consequent social work groups and conferences, have had to depend largely upon their own judgment and initiative as to how the work must be performed. Fortunately, their directors, who are always the superintendents of the hospitals in which they work, are usually able to give the time to instruct them and to direct their work, interpreting to them the major difficulties of each individual patient. In larger centers individual district workers do not have this close contact with the superintendent, and must depend on their immediate superior. In any event, the work is performed as each director judges it should be.

As the work has extended so widely and has now become so necessary a part of hospital routine, it becomes apparent that the development of psychiatric social work has never become systematized or accurately defined, and this is the next step in the development of it. States are beginning to realize this need and already are taking preliminary steps to have the work more codified and closely unified. Illinois has taken a long stride in this direction, and we quote from the Hospital

Worker's News-letter the following plan for better unification:

"A growing need for correlating the work of the social service departments in the State hospitals of Illinois, and for simplifying procedure for the supervision of paroled patients, resulted in July, 1928, in the establishment of a central office and the appointment of a head worker to develop a plan of organization. The new department had almost no precedents to follow. Consequently, its procedure had to be worked out principally through trial and error, a process which permitted development only gradually, but in time has yielded practical results.

"The organization of the present is still far from ideal, yet we feel in Illinois that a general foundation has been laid for making this type of State-wide setup useful to other States covering large areas. The fundamental step was that of dividing the State into eight zones with a State hospital heading each, so that the social work of each could be centralized. In the zoning, consideration was given to the number of patients, by counties, who were hospitalized and on parole, and also to the adequacy of transportation facilities. Each district was represented by a trained psychiatric social worker, who was responsible, not only for the social work of her own hospital, but also for all pre-parole investigations required within the counties of her zone, and for the follow-up of all patients returning to these counties, regardless of where they may have been hospitalized.

"Originally, one psychiatric social worker sufficed, but as demands increased, additional workers were assigned. The advantages demonstrated themselves. It is necessary in Illinois for the State hospitals to receive patients both from adjacent territory and from distant counties. This is an arrangement which causes little inconvenience during the hospitalization of the patient, but it was formerly the source of much inconvenience during the period of parole. For instance, before the zoning plan was adopted, the social worker was obliged to spend a great deal of time and money on visits to patients paroled to parts of the State remote from the hospital. Also, because of the time required, there was a natural tendency to visit such patients less often.

"Under the present system, conditions such as these have been corrected. The hospital paroling a patient now arranges for the pre-parole investigations and the later supervision to be carried by the social worker in the zone where the patient is to live. When the patient is ready for parole, the office of the head worker is notified by the zone where he has been hospitalized, and the case is cleared as to zone residence. The head worker then immediately informs the zone in which the patient, if paroled, will reside, and asks a pre-parole investigation. The same procedure is followed in securing psychiatric social histories and all other information needed for out-of-zone patients. Complete files are kept and the central office becomes a clearing house for information on patients from all zones. All requests, replies, reports authorizing parole, and showing progress of patients on parole pass through this office so that at all times the number of patients on parole in different zones, the dates on which reports concerning them are due, and the like, are known by the head worker. A report of the patient's progress is requested each month during the three months' parole period permitted by Illinois law, and a reminder system has been established so that reports on out-of-zone cases may not be unduly delayed. There is provision for extension of the parole if the case warrants it, and occasionally cases are carried by the social service departments even though the legal parole period has terminated.

"In consequence of the complete investigation of home conditions which the new routine makes possible, and the more careful supervision of patients after they leave the hospitals, it is expected that a larger majority of patients may return to the community and be self-supporting, thus relieving pressure in overcrowded wards and decreasing in a very substantial way expenditure for hospital care. Through the regular follow-up reports, the hospital is kept in close touch with the progress of each patient, and even though he is on parole at some distance, is in position at any time to recall him if he does not adjust satisfactorily.

"The plan has advantages for the psychiatric social workers also. With their activities confined to definite zones, these workers become thoroughly familiar with all social resources available, and having at instant command a knowledge of all possible sources of help, they are able to plan for the patient with greater efficiency. Again, because the system affords the psychiatric social worker closer contact with the agencies of her community, it gives her the opportunity of really informing and interesting people in the work of the State hospital. More and more emphasis is being placed on making the State hospitals educationally useful to the communities which they serve. Finally, under this central organization, psychiatric social workers stationed in hospitals in outlying districts no longer feel isolated. They are called into meetings to discuss cases with other workers, and through visits and correspondence from the head worker, are kept in constant touch with new activities in their field.

"The program is one which cannot become rigid. Changes are constantly occurring at the hospitals, and these changes in turn affect the psychiatric social worker and her relationship to the patient. One such change has come with the out-patient clinics, which have been organized in the different zones. These clinics have proved exceedingly helpful in the work of follow-up. They meet monthly in convenient locations. A set schedule is recommended, but in certain districts more or less flexible arrangements have been approved, and they meet where they are accessible to the largest number of paroled patients, a psychiatric social worker attending from the hospital located in the zone where they are held.

"Recently, two other projects have been undertaken which, although stimulated by the economic depression, have met with such success that they will no doubt become permanent. The first is a program in occupational therapy. Because of the dissatisfaction and unrest to which lack of employment has been leading among paroled patients, a plan was worked out in the Chicago district for an occupational therapy class or "halfway house" of employment to accommodate the patient on parole, but out of work. This class has offered the psychiatric social worker a very practical resource in her role of planning social treatment for the patient's better adjustment in home and community, and many evidences of its therapeutic value may be found in the progress notes of case records. The purposes of the second project were to determine how far it is practical to include recreational planning as a part of the follow-up supervision of paroled patients, and also, to learn to what extent the co-operation of recreational agencies could be obtained in carrying out such planning. The general treatment objectives were the same in all cases, namely to provide through recreational activities a medium of self-expression for the patient, and a means of assisting him in the process of re-socialization. The results of both projects have been satisfying, and it is planned to enlarge them as time and funds permit.

"A valuable addition to the general staff of the program is a research psychiatric social worker who may be assigned to any hospital district at any time to make special studies for the group. She has just completed a study, the purpose of which was to investigate the possibilities of extra-mural care for those patients whom the hospital considered eligible for parole, but whose parole had not been requested due to a complete lack of relatives or friends. Several interesting possibilities for care outside the hospital have developed from this study.

"Recently, the psychiatric social work positions in Illinois have been placed under Civil Service, well qualified persons have been appointed to give the examinations, and standards for the individual positions have been raised. The requirements have always been sufficient to qualify the chief psychiatric social worker for active membership in the American Association of Psychiatric Social Workers, but the new standards go farther. They should make any psychiatric social worker in the program eligible at least for junior membership.

"Of course, all public employment is jeopardized by the whims of politics, and before the ideal of State hospital psychiatric social work can be attained, the work must be given continuity. Perhaps this can be done in two ways, first, by establishing the standards on such a high plane that the politician is discouraged from placing his satellites in the available positions, and second, by making the attempt politically unpopular. The latter is certain to happen as soon as the public is made conscious of the fact that its own interest requires trained efficiency instead of patronage in caring for its mental patients."

New York State, too, is undertaking unification of the work done by their social workers by organizing a State Department of Mental Hygiene, and while the social workers are still entirely responsible in their work to the institution to which they are attached, the State Department maintains an advisory position working out general policies, arranging educational opportunities for the staff, and giving practical suggestions regarding the development of the work in the different hospitals.

While it will be seen that social work in State hospitals has become firmly established and is rapidly progressing from its very humble beginnings, there are still larger developments to come, and at present the outlook is encouraging as to its future growth and higher achievements.

WOMAN'S AUXILIARY AMERICAN MEDICAL ASSOCIATION

Mrs. James Blake, *President*
Hopkins, Minnesota
Mrs. Robert W. Tomlinson, *President-elect*
Wilmington, Delaware

Mrs. James Blake has just returned from a visit to Cleveland where she went over the plans for the annual meeting with the Cleveland women. A very capable group of doctors' wives under the able supervision of Mrs. Clyde L. Cummer has charge of the social affairs for the convention. The tentative program of entertainment follows:

Monday, June 11—

Luncheon of Auxiliary Board at the Hotel Carter.

Dinner in honor of Past Presidents and Board at Hotel Carter.

Mrs. Alfred Maschke, chairman.

Tuesday, June 12—

Luncheon, Bridge and Style Show, Lake Shore Hotel.

Mrs. Oliver A. Weber, Chairman.

Wednesday, June 13—

Auxiliary Luncheon at the Hotel Carter.

Mrs. Russell H. Birge, Chairman.

Thursday, June 14—

Luncheon at Country Club, Sight-seeing Tour. Mrs. James R. Driver, Chairman.

"Bring-Your-Husband Dinner" — Hotel Carter.

Friday, June 15—

Women's Golf Tournament, Wentwood Country Club.

Mrs. E. D. Saunders, Chairman.

Along with this splendid social program, which is entirely in the hands of the wives of the Cleveland members of the American Medical Association, will go a program of business planned and directed by the Auxiliary. The reports to be heard and the business to be transacted this year are of such import that the meeting cannot help being of exceptional interest to every Auxiliary member. Our next News Letter will carry full details and completed plans. Decide to be with us in Cleveland from June 11 to 16. The Auxiliary headquarters will be at the Hotel Carter, Prospect Avenue and East Ninth Street.

Mrs. Joseph S. McDaniel, president of the Delaware Auxiliary, entertained the members at luncheon at her home in Dover, on May 8.

After luncheon a brief business session was held, following which Mrs. McDaniel introduced the speaker of the afternoon, Mrs. Wilmer Krusen, of Lansdowne, Pa., who gave a very interesting and highly instructive talk of special interest to all present.

There were about thirty-five members present, and all voted it a very pleasant and happy afternoon. Each member thanked Mrs. McDaniel for her gracious hospitality.

BOOK REVIEWS

Case Studies in the Psychopathology of Crime—Vol. I. By Ben Karpman, M. D., Professor of Psychiatry, Howard University. Pp. 1008. Cloth. Price, $12.00. Washington (D. C.): Mimeoform Press, 1933.

At the outset it must be said that this is a ponderous book which requires close reading. To some extent it suffers from an apparent attempt to reach a variety of readers, which may largely account for its size and inclusiveness. The writer, who has been a psychotherapist at St. Elizabeth's Hospital for several years, is a former pupil of Stekel, to whose point of view he rather closely adheres.

But first, as to the formal content of the book: five cases are discussed in a volume of over a thousand pages, so that about two hundred pages are devoted to the discussion of each case. They are psychiatric patients, who had been inmates of penal institutions and were subsequently transferred to the Department for the Criminal Insane of St. Elizabeth's Hospital in Washington. The pages devoted to each case follow a more or less uniform pattern comprising a number of chapters, some picturesquely labelled. There is first a conventional hospital record, which the author belabors for its inadequacy and for its poor evaluations. Then follow in order the patient's auto-biographical material, which is divided into various sub-groups. Quantitatively, these form the major portion of the book. Observations and evaluations by other patient observers come next. The author offers no valid reason for the inclusion of most of these observations, and while in a way interesting one is rather hard put to for a justification. (Those by patient Brandon are remarkably pertinacious and sound, displaying as they do rare critical intelligence and raising some question about this patient. Why, for example, was not his case history included? He is articulate and intelligent, and an account of his life would seem to give promise of being a more fruitful and interesting one than some of those included.) Then come miscellaneous notes and eatamnestic material, together with the author's own epitome, in which he gives an all too short diagnostic formulation, a formulation which is loaded by interpretations of the patient's sex life. In this connection it is interesting to point out the author's inveighing against the diagnostic differences existing between the various members of the hospital staff (p. 572). He describes their discussions, based on inadequate material, as mere speculations, and yet he feels the same obligations, on the basis of similar admittedly fancied data, to classify the patient in the "scheme criminal."

It is evident that the writer has a great deal of sympathy for the type of cases he presents, for it required painstaking labor to put so much material together. It would be invidious, therefore, to take him to task for too much space and emphasis on formal diagnostic considerations or for the repetitiousness of the various sections of the histories and biographical sketches. His generous oversight of discrepancies and conflicting statements which are found throughout the material may also go unchallenged, but the work as a whole, because of its physical size, invites some critical comments on the validity of this type of scientific and psychological method. We have in the atomistic tradition of the psychology of Wundt an attempt to reduce behavior to simple but artificial units. Here we have the exact opposite—not to reduce behavior to simple units and to see not only one segment of the behavior (the crime segment) but the whole personality and its setting and conditions, and to see it, moreover, not only by one observer, but by several, including other patients, as well as by the patient himself. The author does this by means of guided questionnaires through the auto-biographic method, with the upshot of a tremendous wealth of detail. And it is at this point that one would like to raise the issue of the validity of the method. The patient writes stories about his youthful escapades, plays, loves, wandering thoughts, and hopes. In a word, there is a flood of detail, often with a thinly disguised undercurrent motive of self-justification, with little systematization or order beyond the chronological sequence, not always observed. Is this pertinent exhaustiveness or mere tautology? It would be unfair to say that these details are irrelevant, since the patient is the center from which every detail flows, but it is legitimate to ask whether the coefficient of correlations between the patient's significant behavior and the detail is great enough to have much value. Does not too much inconsequential detail indeed diffuse and blur the picture rather than clarify, define and focus it? Would not a greater economy of detail and boiling them down to the salient facts serve better the purpose of giving the reader a clearer understanding of the patient, the personality, psychological and social forces involved and of their operations?

This leads us indirectly to another and by no means an unimportant consideration — that of our function as psychiatrists. Does it consist only in sizing up the human experiment with which we deal (or as the author says, in the determining of the "psychic background of behavior," p. ix), or are we not also responsible for the treatment? One would wish that the author would have said more about his treatment. It would have been valuable to know just what he did, and with what results, and what changes occurred in the patient, and what were the tests of the trustworthiness of their statements of improvement. Were the mere auto-biographical narrations the therapy, or what else was done? One misses not only the therapeutic steps, but the physician's evaluation of their outcome and upshot, and what the future is likely to hold. As it is, one is left with a suspicious feeling that he would allow us to accept the patient's own shoddy promises and statements of profound transformation. Take the first case, for example. This is a psychopathically unstable fellow, a sentimental ignoramus, little above the level of a moron, with an itch for literary embellishment, resulting in much shallow bombast, pouring forth second-hand editions of the Sunday supplements and the platitudes of Main Street, giving assurances of his change for the better as the result of the treatment he had received, but showing no evidence of this in his performances or hospital adjustment. His autobiography has a value as a stammering revelation of the unstable and shifting stratum of society. How much other value it has is probably best known to the physician who worked with him. For that reason it would have been helpful to the reader to have the physician's statement regarding this, as well as regarding the prognosis in the light of the patient's assurances.

Much of the material, indeed, might be more properly considered a sociologic rather than a psychiatric document. As such one wishes that the play of social-economic factors in the problems of these criminal careers might have received the consideration it deserves. For while crime is probably largely a problem of personalities, especially in the psychopathic types, it cannot be ignored that it is also the outgrowth of mores and conditions of the prevailing social order. That the problem has found a place in psychiatric interest and work indicates how increasingly inclusive psychiatry has become. Take a sample of the social segment to which these individuals belong and their life charts sound surprisingly familiar. In their excuses, self-justification, disavowals, hopes, resentments, and ambitions one perceives the dynamics operating generally in the cultural milieu in which these patients grew up and had their being. One sees an urge in them, despite the fact that they have become social variants, to merge their identity with the group (an expression of what has elsewhere been called the "herd instinct"), with their avowals of conformity, to be sure largely verbal, but which, nevertheless, is an attempt at an erasure of their distinctive individuality.

One thing more must be mentioned — the degradation of the prison life which these patients often attest. Their claim of the brutality of the guards — if true — the impersonal harshness, the whole atmosphere devoid of humane feelings, the suspiciousness and double-dealing the system fosters, the absence of any attempts toward reclaiming the prisoners, is one of the glaring features which the description of the prison life brings out. In contrast to this is the hospital life and its hand of helpfulness and understanding. If the book calls attention to this alone and stimulates penal melioration, in the humane spirit of psychiatry, it will have performed a highly worthwhile function. Meanwhile, we shall bide our time and look for subsequent volumes, in which we hope to get some light on results of treatment of psychopathic criminals in general, and the author's therapeutic methods in particular.

— Elmer Klein.

Love, the Science of Sex Attraction. By Bernard S. Talmey, M. D. Fifth edition. Pp. 500, with 52 illustrations. Cloth. Price, $3.00. New York: Eugenics Publishing Company, 1933.

Talmey's book is now in its fifth edition, which is to say that it has been popular, and we believe deservedly so. Dealing with a subject till recently almost taboo, the present edition is an enlarged one, with the old Latin phrases replaced by English. The moral plane is high; he espouses the single standard; and he outlines a sensible program of sex education for children. The book is written for the layman, but in many places is much too meaty, too technical, or too detailed; e. g., such words as "orchitis," "oophoritis," "tachycardia," "pollakiuria," are used but not defined—there is no glossary. Further, it is distinctly inaccurate and harmful to state (p. 419) that "salpingectomy" is a "minor operation," and we are amazed to learn (p. 448) that coitus interruptus causes "fibroids or cancers." On page 488 the word "vagina" evidently should be "urethra"; and on page 489 occurs " . . . symptoms . . . is . . . " These minor corrections will doubtless be made in the next edition. The selection of the wedding day (p. 438) involves a discussion much longer than we have space for, but we regret that the author totally ignores the newer researches of Knaus, Ogino, and others which indicate that the middle of the intermenstrual cycle, instead of being the "safe" period is the only fertile period.

While the book thus contains certain statements that, we feel, do not belong in any work, even an uncritical one such as this, intended for the layman, it is, nevertheless, replete with common-sense advice for the newlyweds, and to them we can heartily commend it. Also to them it might be a bit more acceptable if it contained an index and a glossary.

Our Mysterious Life Glands. By William J. Robinson, M. D. Pp. 291, with 49 illustrations. Cloth. Price, $2.50. New York: Eugenics Publishing Company, 1934.

Of the various books that have come from the pen of this prolific writer (32 titles) that we have seen, this popular work on the glands and the vitamins strikes us as being his best. Since he discusses only facts that have been demonstrated, very little divergence from his conclusions can or will be taken. The glossary will be of great help to the lay reader. The best chapter is, perhaps, the one on homosexuality, wherein the author takes the viewpoint that true homosexuality is always congenital, and represents a glandular aberration, a viewpoint with which we concur.

However, since the book is written for popular consumption, it seems to us somewhat absurd to quote (p. 80) the method for obtaining estrin from the urine of pregnant women; likewise the hostile and lengthy quotation (p. 185) from Berman's article on post-pituitarism. Also the directions, with dosage, for using iodine in curing simple goitre (p. 25) are much too specific to place before a public already too prone to self-medication; and the message as to the use of dinitrophenol in obesity (p. 114) should be omitted for the same reason.

While somewhat dogmatic in spots, the style is clear, entertaining and occasionally amusing — intentionally so — making the work easy to read. The illustrations are very good, the glossary almost ample, and the index fully so. Altogether, we consider this to be Dr. Robinson's best book, and it ought to be one of his best sellers.

I Know Just the Thing for That! By J. F. Montague, M. D. Pp. 265. Cloth. Price, $2.00. New York: John Day Company, 1934.

This is a popular work on a multitude of subjects, such as cathartics, roughage, gall stones, health foods, yeast, blood pressure, exercise, sciatica, obesity, constipation, and a lot of other things, but mostly — and pervading almost every chapter — on the colon; in fact, since the book seems intended as a sort of general health guide, we believe the author overstresses the importance and effects of this one particular bit of anatomy. Nevertheless, he has written a book in a racy, likeable style that contains a whole lot of sound advice about things to do and things not to do, and we really believe it merits a wide reading by the general public.

Page vi, "About the Author," seems to us to be in poor taste. Usually such complimentary data, if published at all, is published in a foreword written and signed by a medical authority whose reputation is well established; this particular page of personal laudation is unsigned, and immediately invites the question: who wrote it?

Antidote for Acute Mercury Poisoning

Sanford M. Rosenthal, Washington, D. C. (Journal A. M. A., April 21, 1934), used sodium formaldehyde sulphoxylate as an antidote in twelve dogs, nine of which were saved from a fatal oral dose of corrosive mercuric chloride, when administered by mouth and intravenously within an hour and a half after the poison had been taken. The nine surviving animals were protected against kidney damage, as shown by the lack of elevation of the blood non-protein nitrogen. In the dogs that succumbed following this therapy or following intravenous therapy only, no significant renal lesions were demonstrable histologically. The author employed this therapy in ten cases of corrosive mercuric chloride poisoning in human beings. The results have been confirmatory of the experimental observations. The fact that no fatalities and no appreciable kidney damage occurred in any of these cases is suggestive of the value of the therapy in view of a mortality of approximately 25 per cent as reported by recent investigators and with renal injury occurring in a further percentage of the survivors. However, it is usually impossible to know the amount of mercury absorbed by these patients, and final conclusions can be drawn only from an extensive series of cases.

Moniliasis of the Skin in Diabetes

E. F. Traut, Cleveland White and R. B. Hemphill, Chicago (Journal A. M. A., April 21, 1934), present two cases of diabetes complicated by infection with Monilia. The first patient received the usual fungicides without improvement; instead, the condition became much aggravated. The allergic constitution previously manifested by urticaria and the precocious endarteritis probably contributed to the severity of the fungous disease. The second, older, patient also had a predisposing obliterating endarteritis. This patient showed the "id" reaction to the fungous toxin about the eyebrows. He had received no treatment prior to admission to the hospital. Both patients responded rapidly to competent diabetic management without local fungicidal medication. Therefore competent diabetic management seems to be the deciding factor in the treatment of Monilia infection of the skin in cases of diabetes.

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TREATMENT OF PERFORATIVE APPENDICITIS*

W. E. Burnett, M. D.
Philadelphia, Pa.

In few conditions is the time factor so important as in appendicitis. An hour may make the difference between clean, safe removal without drainage on the one hand, and a palliative and dangerous operation for drainage alone on the other. At one o'clock the prognosis may be 1% mortality, and at two o'clock 50%. The importance of early operation is paramount, but in the experience of all of us there are a sufficient number of late or obscure cases first seen after the appendix has ruptured to warrant detailed attention, for it is in this group that most of the deaths occur.

On the surgical service at Temple University Hospital in the past two years, one out of each 12 cases has been perforated. Of these, 63% were localized, and 37% generalized. The generalized group showed 50% mortality, but of the localized ones only 10% died. (Table I). The mortality for the two types as recently compiled in several communities is between 50 and 60%, while ours has been 25%. This improvement we feel has been due to certain details which we will consider.

As the suppurative process develops to involve all layers of the appendiceal wall, the reaction of the serosa attracts the mobile omentum and, to a less extent, the other adjacent viscera, which rapidly stick and surround the offender. If laxatives, food and enemata are not taken peristalsis disappears and the loops of intestine and omentum lie quietly around the inflamed appendix long enough to adhere and efficiently wall off this area. Then when the perforation occurs it is into the prepared pocket which prevents spreading. On the contrary, when the stimulation of laxatives or food cause active peristalsis the attempts at adherence are often unsuccessful—the constant and excessive movements will not allow loops of bowel to remain long enough—and when rupture takes place the pus may migrate in any direction and is distributed by the same "stirring" process to all parts of the vulnerable and unprepared serosa. Under such circumstances even mildly virulent bacteria can cause great harm. Operative interference is harmful in direct proportion to the amount of trauma, which further breaks down local resistance. Even at this deplorable stage, however, if the virulence of the organism is not too great and the patient's resistance fairly good, the proper treatment will arrest the process. Treatment is based upon arrest of peristalsis and maintaining or increasing the patient's resistance.

If the diagnosis of generalized peritonitis could be accurately made we believe that such cases should be treated on the principles just mentioned and should not be operated upon immediately. However, this diagnosis is often erroneously made or erroneously missed, as we all know, and for this reason most of our cases are operated on at once. In a few cases which exhibited all the signs of generalized peritonitis plus shifting dullness we have refrained from immediate operation, with gratifying results.

Ordinarily, however, emergency operation is done. Spinal anesthesia is used in the great majority of cases, including young children, because its superb relaxation greatly reduces the intensity and length of operative trauma. When the patient is a poor spinal risk, regional block with or without reinforcement by ethylene is substituted. Rarely, ether is chosen. The incision is a transverse skin

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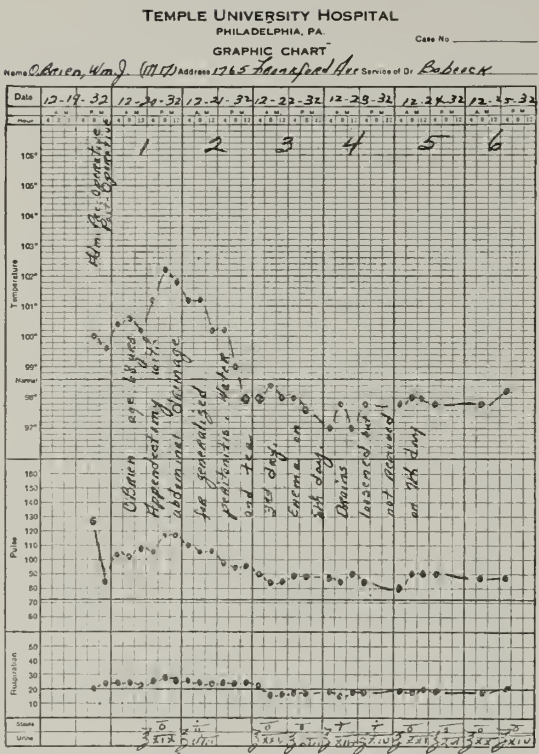
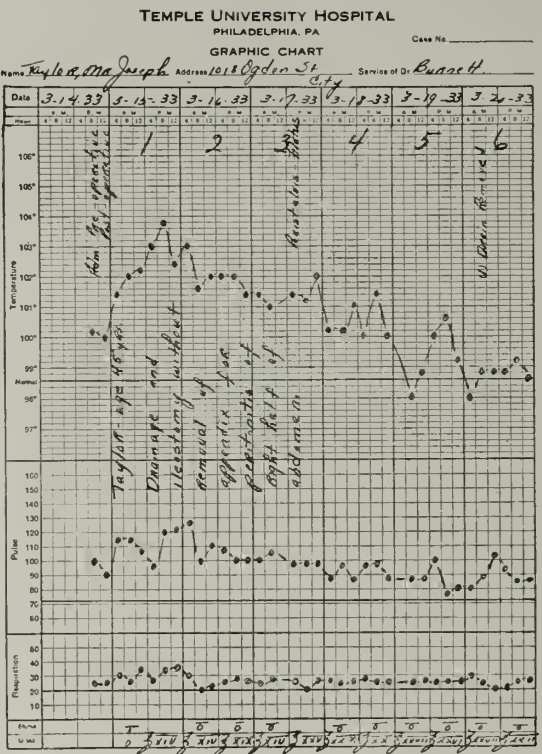
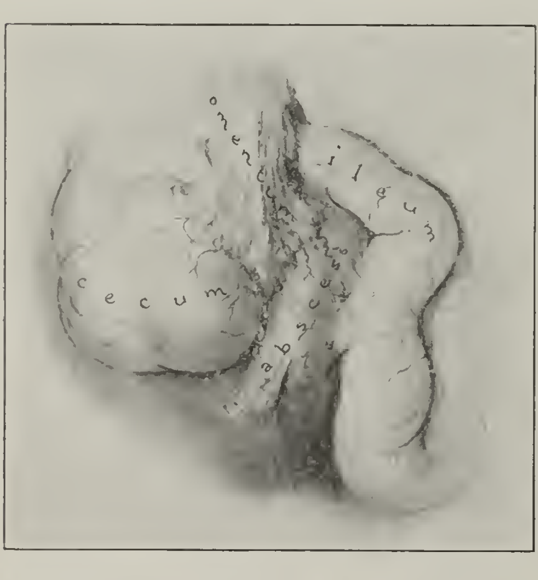
*Read before the Medical Society of Delaware, Wilmington, Delaware, September 26, 1933.



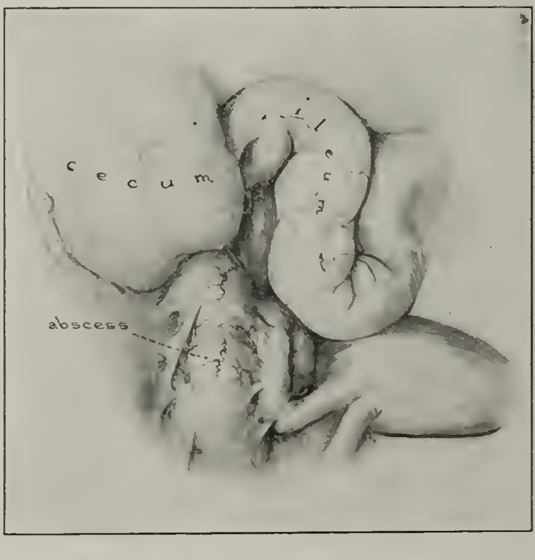


and muscle-splitting type, placed as directly as possible over the appendix. Trauma and handling are minimal, and most of the work is done under vision by "low-trauma" instruments. Suction almost entirely replaces sponging. Cultures are made, and if the appendix is easily gotten at it is removed. If not, it is allowed to remain, and in either case drainage is instituted with long wicked cigaret drains into the usual recesses. Often no sutures are placed since two or three cigaret drains fill the wound sufficiently. Recently, in a few cases, bacteriophage solutions have been introduced into the peritoneum at this point.

Directly after operation, and at times be-



Medial location—not infrequent. Artist's interpretation. For the sake of clarity only the early stages are shown.



Early pelvic abscess of appendiceal origin. Contrary to the illustration above, the appendix lies posterior to the broad ligament and tube.

fore, the principles of arrest of peristalsis and maintaining resistance are applied. Morphine is given hypodermically in moderate dosage for the first 24 hours. Nothing is given by mouth or *bowel,* continuous hyperdermocylsis of 2 or 3% glucose in normal saline is given into the thighs up to 2 3000 cc. in 24 hours, and additional glucose partially covered by insulin is administered intravenously to furnish energy and to protect the liver cells in their strenuous detoxifying activity.

The intravenous solution is given slowly, usually three times a day, occasionally by continuous drip. The patient is kept flat for 2 hours after spinal anesthesia, and is then placed in extreme Fowler's position. Rectal tubes are introduced at 4-hour intervals, but no suppositories, enemata, or hypodermic stimulants to peristalsis are permitted. If vomiting, hiccough, or gastric distension occur the vacuum suction apparatus of Wagensteen is attached to a Levine tube through the nose into the stomach for constant drainage. Under such circumstances water may be drunk by the patient because it is removed by the tube almost drop for drop, leaving none to cause peristalsis and it serves the dual purpose of satisfying the patient's desire for liquids and of washing out the stomach. This is a most helpful and satisfactory apparatus, but should not be used constantly any longer than is actually necessary. Too prolonged usage may further upset the body chemistry.

Small blood transfusions in 150 to 200 cc. amounts, repeated every 12, 24 or 48 hours as indicated, have been extremely beneficial, and on a few occasions have reversed the downward trend.

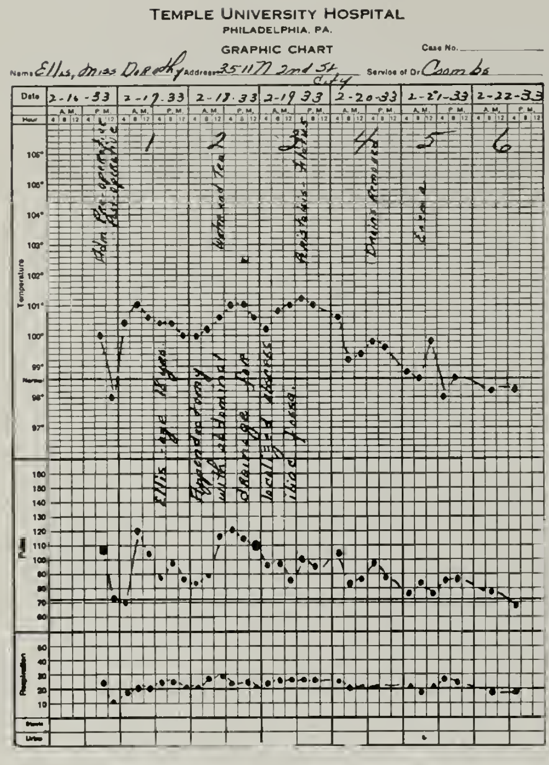
The Schilling count has been helpful in estimating progress, and recently colon bacteriophage intravenously has been used on a few cases—too few to determine its value.

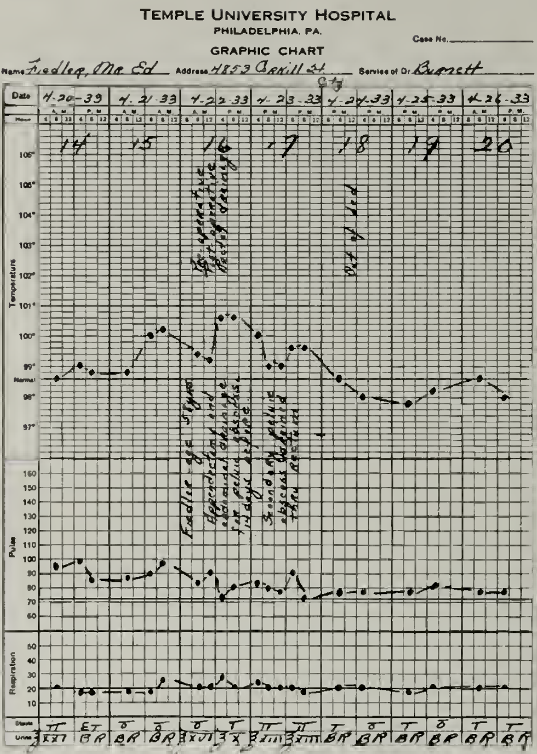
Whether or not the appendix has been removed, if localized intraperitoneal abscesses form they are simply drained under spinal or regional anesthesia through a muscle-splitting incision.

The length of time this plan is followed is not fixed. We have continued it as long as 12 days on occasion with some loss of weight and strength, but not so much as one might expect. It is determined entirely by progress, and is not modified until the temperature and pulse are stabilized and closely approach normal, the patient is free of pain, distention, vomiting, etc., and peristalsis is again spontaneously active and efficient. Then and only then sips of water or unsweetened tea are allowed, and if well tolerated, a 4 to 8-ounce milk and molasses enema is administered. This will produce results if the patient is properly stabilized, and the diet is then gradually increased to include sweetened liquids, later soft foods, etc. At this time also the drains are loosened and one to two inches are withdrawn each day until removed. The trauma of too early removal may reactivate the subsiding process.

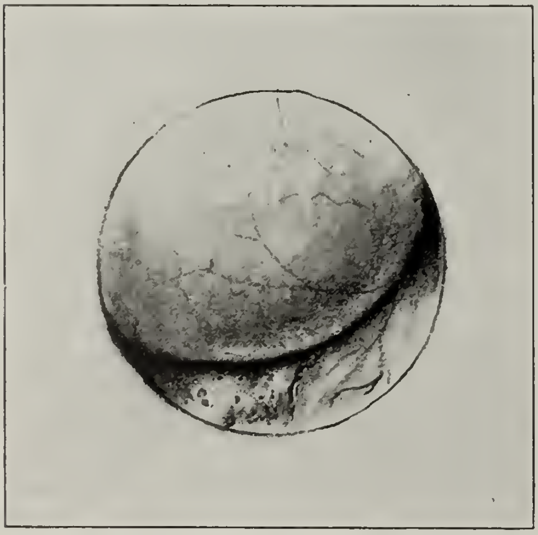
When, in the progress of time, the patient has not been so intent on self-destruction as to take laxatives, or when nature's beneficent efforts to expell such attempts as laxatives or food have been thoroughly successful, he usually falls into that larger group of localized abscess when his appendix ruptures. This increases his chance of surviving by 40%. The location of these accumulations is most often in the right iliac fossa with the anterior parietal peritoneum usually forming the roof. This is the simplest type to attack, since we can feel the mass, place the incision directly over it, enter and drain without contaminating any clean peritoneum and with practically no manipulation. These patients have rapidly recovered. At times the mass lies entirely on the posterior wall and does not involve the anterior. Drainage of this necessitates traversing clean peritoneum but by gently surrounding the area with wet gauze and emptying the cavity by suction much of the possible contamination has been avoided. In a few such cases the abscess was inspected but not opened, the peritoneum closed and reflected medially until the abscess was reached where it was punctured directly into the pus, causing an extra-peritoneal drainage and again avoiding contamination of clean serosa. The extra-peritoneal contamination seems to cause little difficulty.

A word of warning should be sounded here. On one occasion, in doing this for retrocecal abscess, the peritoneum was left open to determine the distance posteriorly the dissection should go. Then it was intended to close the

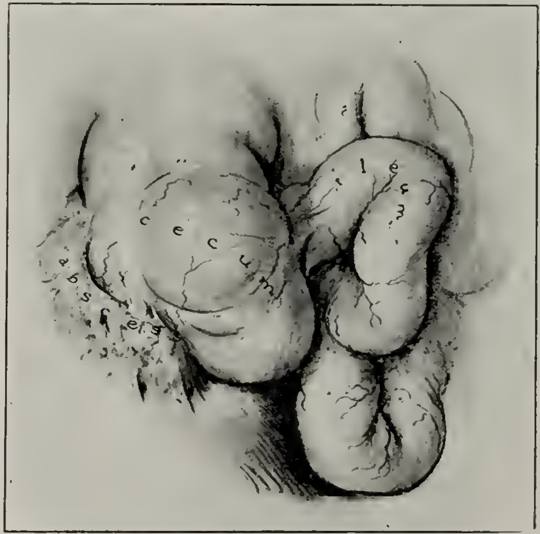




peritoneum anteriorly and open directly into the cavity posteriorly. Before this point was reached, however, the manipulation of stripping the peritoneum by blunt dissection ruptured the thin inflammatory barrier and released the pus intraperitoneally. If we had already closed the serosa we would not have noted this escape and might have gotten a generalized peritonitis. The usual drainage was instituted and the child recovered, but had to be re-operated three months later because of recurring appendiceal fistula. At the second operation the appendix, perforated near its base and regenerating, was removed and the wound healed by primary union. Such secondary operations for fistula are ex-



View through rectal speculum in the presence of a large pelvic abscess. Note the smooth, shiny anterior wall impinging on and almost blocking the rectal lumen. This protrusion is indurated at its margins, fluctuant at its center, and generally slightly to moderately tender.



A common location of appendiceal abscess. A slightly more posterior position constitutes the Retrocecal type.

tremely rare even though, not infrequently, the appendix is not removed.

The next most common location is in the pelvis. This is because it is a frequent position of the head of the cecum, and secondly because acute appendicitis in this location often causes such vague signs as to lead to under-estimation of the severity of the attack and steps are not taken until rupture has occurred. Even abscess here causes surprisingly little discomfort when compared with the extensive pathology. Therefore, we believe rectal examination should be made in each case, and frequently we are rewarded by finding the tenderness and induration here which are absent on abdominal palpation. Here again the anterior parietes usually are not a part of the abscess, and clean peritoneum must be traversed for drainage. To avoid this recontamination we have, on two male patients, opened the abscess through the anterior rectal wall, and although these very ill patients were considerably improved, we had to open the abdomen from 8 to 18 days later under improved circumstances for removal of the appendix. With secondary pelvic abscesses forming during convalescence from appendectomy this procedure has been extremely valuable, and the patients have rapidly recovered without further ado. In fact, on one occasion the abscess ruptured spontaneously into the rectum as the patient was being put in the lithotomy position for rectal drainage and it was necessary only to enlarge the opening to evacuate a large quantity of foul pus.

Such a secondary pelvic collection can be suspected when there is continuation or recurrence of fever in a patient recovering from abdominal drainage, with a frequent desire to defecate, associated with the passage of much mucus and little feces. Rectal examination will clinch the diagnosis upon finding a bulging anterior rectal wall, which when palpated is firm at the margins, somewhat cystic at its center, and slightly tender. If there is not this definite localization the results of drainage are not so eminently satisfactory. But when the case is properly selected, drainage can be instituted directly into the abscess without contamination of any clean peritoneum, the procedure is short and without shock, only short gas anesthesia is required, and the opening is dependent, with gravity drainage. The risk of opening into a loop of bowel is slight and the worst result of such an accident would be intestino-rectal fistula, which would cause no disability. Contamination of the abscess by going through the rectum is nil, since the same bacteria exist in both places. Hemorrhage is trivial and the wound rapidly heals, so rapidly at times that it is necessary to insert the finger every 2 or 3 days if prolonged drainage is required. It has the additional advantage that it produces no further weakness of the abdominal wall and therefore does not prolong convalescence. Two of our patients were allowed out of bed within three days after this procedure. (Bailey and Pauchet, et.)

It has been recommended by Hertzler and others to approach pelvic abscess by stripping the recto-pubic peritoneum away until the pathology is reached thus draining it extraperitoneally. This is a long reach, the peritoneum can easily be torn into, important vessels may be injured and at best it is a long, uphill channel.

The third most common location is retrocecal or lateral to the cecum. Here again signs are sometimes indefinite and tenderness may be most marked laterally, since the anterior parietes are often not inflamed. Here extraperitoneal drainage has been used on a few occasions to advantage, thus avoiding any spread of the infection. If such spread can be avoided recovery is gratifyingly rapid. Therefore, in these localized abscesses, if the appendix can be removed without breaking down more barriers than are necessary for drainage alone, then only is appendectomy done. If additional barriers must be broken down, the appendix is not disturbed and drainage is instituted. Few of these patients are known by us to have had further attacks of appendicitis or for other reason required secondary operation. Those of which we have heard have been extremely rare. Even if secondary operation becomes necessary it is under much safer conditions. With the localized abscesses the same pre- and post-operative care, anesthesia, and incisions are used as described for generalized peritonitis.

It appears that we have improved results in the care of perforation of the appendix than are generally reported.

This we believe due to:

(1) The use of spinal and local anesthesia.

(2) Minimal operative trauma—in a few instances postponing operation—with direct drainage routes, and avoidance of spread of infection or disturbance of local resistance where possible.

(3) Modified Ochsner treatment with partial maintenance of nutrition pre- and postoperative for a sufficient time to give nature every assistance.

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TABLE I

	Per Cent	Mortality
Incidence of Perforation:		
Acute Appendicitis ...	8.7	25%
Generalized Peritonitis .	37	50%
Localized Peritonitis ...	63	10%
		including pulmonary embolism, myocardosis, etc.

Multiple Sclerosis: Cervicodorsal Sympathectomy as a Relief Measure

Frederick S. Wetherell, Syracuse, N. Y. (*Journal A. M. A.*, May 26, 1934), presents a case in which there was a remarkable alleviation of symptoms following cervicodorsal sympathectomy. His oldest case shows improvement over a period of eighteen months. The possibility that a sudden remission took place in the five cases following the procedure outlined is extremely remote. Decreased vascularization has been shown to result in myelin degeneration of the type found in multiple sclerosis and can be explained on the basis of an asphyxia or anoxemia of the tissue in the neighborhood of the involved vessels. Royle has shown by animal experimentation on brains of living goats that there is an improvement in cerebral circulation following sympathetic trunk section. His observations relative to relief of venous congestion are interesting when considered in the light of Pfeifer's studies, which show that the "perivascular free space" obtains part of its nourishment from the vein contained within it, and of Putnam's, that blocking of this venous supply produces acute lesions having a gross and microscopic resemblance to the lesion found in multiple sclerosis in man.

THE CLINICAL SIGNIFICANCE OF ACHLORHYDRIA*

T. Grier Miller, M. D.

Philadelphia, Pa.

It is my intention to say something to you informally, about achlorhydria and some of the diseases in which it occurs. I prefer to think of achlorhydria as a breakdown in a defense mechanism of the body.

It may be interesting, in the first place, to say a word about some of the other defense mechanisms of the body, in order to make clearer what I will have to say about an absence of hydrochloric acid in the stomach contents. During 1932 Professor Walter Cannon brought out his most entertaining book on "The Wisdom of the Body." In it he talks in a philosophic way about the mechanisms of the body by which "steady states" are maintained. He also refers to the maintenance of normal equilibrium as "homeostasis." He points out the constancy of the temperature of the body, the fixed reaction of the blood, the fact that normally the sugar, calcium, protein, and fat content are each kept more or less at a certain level.

When one discusses how these stable conditions are brought about, he gets into all of physiology. If we get cold we move about to generate heat, or, if our surroundings are too hot we perspire and lose heat. In all events, we manage to keep a more or less normal temperature. If we drink water to excess, we lose it accordingly in the urine and perspiration: thus nature makes us keep more or less constant in the water contents of our bodies. Likewise, in the sugar content of our bodies. We get hungry, we eat; or if we cannot eat, the liver glycogen is called on, and so the sugar content is kept more or less at a normal level.

Also, the body has a defensive mechanism against irritants; if in the nose, we sneeze; in the throat, we cough; in the stomach, we vomit. Then again, as a defense mechanism, we have paired organs so that if we lose one we have another: kidneys, eyes, lungs, genitalia. Yet the brain, a most important organ, is single. It is, however, enclosed in a bony sheath and is specially protected. The heart, also single, has peculiar protection due to its suspension between the lungs in a bony cage.

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*Read before the New Castle County Medical Society, Wilmington, January 16th, 1934.

In reference to the gastro-intestinal tract, we must primarily consider the body's nutrition, which is its most important function. Most of the gastro-intestinal tract is not essential to life, but the small intestine is. We can get along without a stomach and without a colon, but not without a small bowel: so, this part is placed midway in the tract, protected on the one side by the mouth and the stomach, and on the other side by the colon and the rectum. Thus is the small bowel protected anatomically.

The digestive tract is also carefully guarded from the physiologic viewpoint. From this angle the first line of defense involves the special senses: we see and smell and touch things that we know would be irritating, and we avoid swallowing them. We may think of the functions of the mouth as the second line of defense against injury to the digestive tract: in it we have the organs of taste, which lead us to reject certain substances; we have teeth with which to comminute solid particles; saliva with which to equalize the temperature of things, to dilute chemical irritants, and to begin starch digestion.

The stomach constitutes the third line of defense. Sometimes things get into the stomach in such a state that, if not altered there, they would cause irritation lower down; but the functions of the stomach which involve the secretions of hydrochloric acid, pepsin and mucus, and the motor function of that organ, act in a defensive way. Let us consider these functions of the stomach, and what happens when they break down.

A breakdown of the stomach in regard to the secretion of hydrochloric acid constitutes achlorhydria. This, strictly speaking, is a condition in which the stomach is absolutely incapable of secreting hydrochloric acid, even after histamine. If in any way the stomach can be made to secrete acid, by histamine or some special food substance, then the achlorhydria is false. Histamine serves to differentiate true from false achlorhydria.

We have lost interest in the amount of acid people secrete. I do not believe it is justifiable to spend hours routinely doing fractional test meals. It is tremendously important, however, to know whether or not a stomach *can* secrete acid; the exact concentration of the acid is of less importance. Give a patient some gruel, in a half hour slip down a tube, and secure some of the contents. Add Topfer's reagent, and if the material assumes a red color, then that patient is secreting acid. One may leave the tube in place and get a second specimen 15 minutes later, but if neither the 30 nor the 45-minute specimen shows acid, then inject histamine immediately and wait 15 or 20 minutes longer. If in that specimen, after histamine, acid is present, one has determined that the patient is capable of secreting acid. That is false achlorhydria. On the other hand, if even with histamine there is no acid secretion, then it is a true achlorhydria. Not one time in twenty is it necessary to give histamine.

What are the causes of achlorhydria? In the first place, it is necessary to recognize a group of persons who constitutionally have no acid gastric secretion. Just as one person is predisposed to gall bladder disease, another to duodenal ulcer, another to nephritis, so nature provides us with stomachs that are of different types constitutionally. Some children at birth do not secrete acid. Probably 2 per cent of young children are achlorhydric. As age advances, the instances of achlorhydria increase until finally about 25 per cent of those of 60 to 70 years have an absence of hydrochloric acid. This steady increase may be due, as Hurst claims, to the development of gastritits. Perhaps improperly chewed foods, excesses of food, irritating foods, or the drinking of too much alcohol, are responsible; perhaps repeated acute general infections, as Faber has claimed, or focal infections, such especially as oral sepsis, are responsible. There are then two groups: the congenital and the acquired.

Among the diseases associated with achlorhydria one thinks first of chronic gastritis. There was a time when it was one of the most commonly diagnosed diseases. Extensive degenerative changes in the stomach were described. Then, when it was pointed out that post-mortem autolysis explained such findings, all pathologists lost interest and felt it was not worth while to make sections of the gastric mucosa. More recently, however, as a result chiefly of the study of specimens secured at operation when the stomach is resected, it has become apparent that chronic inflammatory changes throughout the mucosa of the stomach are not rare. It is, indeed, found that chronic gastritis is a not a uncommon disease.

Chronic gastritis is recognized clinically with considerable difficulty. An absence of free acid in the gastric contents, when associated with much mucus in all the specimens, and especially when found in an alcoholic, or one with long standing oral sepsis and bad eating habits, should arouse strong suspicion. Yet many people who habitually abuse their stomachs, do not show evidence of chronic gastritis. That, according to Hurst, occurs in the 80 per cent of people who have normal secretions in their stomachs, but in at least 10 per cent of people there is a tendency to low or absent acidity, and in those gastritis is liable to result from such indiscretions. Similarly, in the 10 per cent that has a tendency to hyperacidity, ulcer may develop from abuse of the stomach. We have a constitutional condition with which to deal, and this perhaps is the determining factor.

Secondly, I wish to point out that persons who have no hydrochloric acid in the stomach, no matter what the cause, are predisposed to develop gastric carcinoma. A current thought is that about two-thirds of all patients who have carcinoma of the stomach have developed it on the basis of a chronic gastritis. There is another group whose carcinoma develops secondary to ulcer: the other one-third. In the latter group the symptoms are usually those of a long-standing indigestion, dating back for years, often five to thirty years, bad in the spring and fall, better in the summer and winter, the attacks usually characterized by burning epigastric discomfort, relieved by food and soda, with belching and sour taste in the mouth. In the contents of the stomach of such cases, even after malignancy has occurred, you will find hydrochloric acid.

The other group, developing on a gastritis basis, gives a different history. In that group the patient, well until a few months before, suddenly gets nauseated, vomits; you examine him and find a big carcinoma of the stomach. Examine his gastric contents and he has no hydrochloric acid. There has not as yet been reported a case that had hydrochloric acid in the beginning of the carcinoma and had no hydrochloric at the end. If they have it at the beginning, they have it at the end. Some have a higher gastric acidity toward the end than they had when the physician first saw the patient.

Not long ago, about five years, a surgeon came into my office and said, "I suddenly became very ill yesterday, will you look me over?" I found a big mass in his epigastrium. He had no hydrochloric acid in his stomach contents. X-ray study confirmed a diagnosis of carcinoma of the stomach. Yet that man had a subtotal gastrectomy, and he is well and active today. At first hand you would say a very advanced case, yet he has done beautifully; as do many of the cases with a short history and achlorhydria, the cases that I believe are on a gastritis basis.

On the other hand, many smaller malignant lesions, developing on an ulcer basis and with acid, have early recurrences after operation. Last year, for instance, a woman came to our clinic with a lesion in the pyloric end of her stomach. It was at first thought to be an ulcer. The gastric acid content was normal. X-ray study suggested an ulcer, but because of its location and a persistence of symptoms she was re-x-rayed a month later. Still the nature of the lesion was in doubt, but because the niche had not decreased, operation was performed. A small malignant lesion was found and resection was performed; within another few months she had an intestinal obstruction, due to metastasis, and died. This represents the outcome in many of the cases on an ulcer basis. This better prognosis in the achlorhydric cases suggests that the gastritis is primary and not secondary to the carcinomatous lesion. It favors the thought, therefore, that gastritis predisposes to cancer.

So one group of patients apparently gets carcinoma on a gastritis, or at least on an achlorhydria basis. Incidentally, a surgeon may feel more hopeful of a good result from radical surgery in these than in those on an ulcer basis.

One other point in favor of achlorhydria as a predisposing factor in cancer. We are more and more frequently discovering carcinoma of the stomach in patients with primary anemia. This is more common now that, due to the use of liver, they do not die of their anemia. They seem to be suitable subjects for developing malignant disease of the stomach. Certain studies of the stomachs of such anemic subjects show evidence of diffuse gastritis. This then is another argument in favor of the theory that gastritis precedes gastric carcinoma. Dr. Castle has demonstrated beyond all doubt that there is normally an X-factor in the stomach secretion which prevents the development of primary anemia, that it is absent usually in association with an absence of hydrochloric acid. The fact that cancer of the stomach develops under such circumstances naturally suggests that the gastritis, frequently associated with the achlorhydria and probably responsible for it and for the absence of the X-factor, also underlies the development of the malignant lesion.

May I now refer to a few patients with carcinoma of the stomach and with primary anemia whose histories strongly suggest a preceding and primary gastritis. About 1920 a patient came under my observation who had been an alcoholic all his life: he came in because of colon trouble. A gastric analysis showed no free hydrochloric. Four or five years later he presented the typical picture of primary anemia. With transfusions and later by means of liver extract, his blood was restored to normal and he continued in good shape, until finally about a year ago a carcinoma of the stomach was recognized. His stomach at autopsy showed, in addition, typical diffuse gastritis. It at least seems probable that he had the gastritis first, this developing on an alcoholic basis and accounting for his achlorhydria 13 years ago, and that secondary to that lesion he later developed primary anemia and finally the cancer of the stomach.

In another patient, a minister, a gastric analysis 25 years ago showed no hydrochloric acid, and cancer was suspected. He later developed primary anemia which was diagnosed first at the Geisinger Hospital of Danville, Pa., and later at the University Hospital. On a still later admission, about a year ago, carcinoma of the stomach was recognized, and that led to his death. The etiology for a gastritis in this case is not clear, but he had had an achlorhydria for many years, which might have resulted from a gastritis, or might in itself have led to a gastritis. In any event, it is easily conceivable that both of his later and more serious diseases were complications of such a lesion.

A third patient, seen about 4 years ago in our wards, presented the picture of cardiac decompensation, but was also anemic, had no free acid in his stomach, and x-ray evidence of polyps. Dr. E. L. Eliason, at operation, removed the polyps, one of which proved to be malignant, and the patient then made a good recovery. We believed his anemia at that time was due to hemorrhage from the stomach polyps, but later a diagnosis of primary anemia was made, and he has done well since then on liver therapy. Dr. Conner, of the Mayo Clinic, within the last six months, has reported some twenty cases in which both carcinoma of the stomach and primary anemia had been present. There are more and more cases of this sort being reported, quite a few in the foreign literature.

I should also briefly refer to another type of anemia in this connection. We are all familiar with the chronic idiopathic hypochromic anemia of middle-aged women. Those patients show an achlorhydria, and get well on iron medication. The iron in green vegetables is not sufficient, apparently because something is lacking in the stomach secretion, which makes it impossible for them to utilize the iron in food substances. Mettier and his associates have showed, however, that predigested iron-containing foods relieve this anemia, this suggesting that the absence of acid or some other factor in normal gastric secretion is responsible for the condition. There are other anemias, such as that of pregnancy, in which achlorhydria occurs. Some of these resemble primary anemia and are cur-able by liver therapy; others apparently, as Strauss and Castle have showed, are due to a dietary deficiency conditioned by gastric anacidity.

I have seen patients with achlorhydria develop sudden intestinal attacks characterized by high fever, abdominal cramps, and diarrhea. These attacks, I have believed, were due to irritant food material, perhaps infected, getting through the defective stomach and setting up acute intestinal inflammation. I observed a number of such attacks in a patient of 75 years, who had been without gastric acid for at least 20 years: otherwise he was in good health.

Many pellagrins have achlorhydria, 75 per cent according to some observers. Such a high incidence in any disease must be of significance, though it is not as yet understood. Many cases of arthritis lack hydrochloric acid. Some think that gall bladder trouble is more common in achlorhydric individuals. I doubt if this is altogether true, since many gall bladder cases have plenty of acid in the stomach contents. Dr. Hurst thinks that patients who are achlorhydric are more susceptible, however, as a result of the organisms of the lower bowel, under such circumstances, reaching the duodenum and eventually the biliary system.

In conclusion, I have tried to present in this very informal way the idea that it is possible to look upon achlorhydria as a breakdown in a defense mechanism of the body. If we think of the presence of hydrochloric acid as one of the things nature has given us to ward off danger, you get the point of view. In some individuals achlorhydria is present from birth; in others it develops as a result of insults to the stomach; whereas in still others, in spite of stomach abuse, it does not develop. Achlorhydria, whether congenital or acquired, predisposes to gastritis, to carcinoma of the stomach, and to primary anemia; perhaps, in addition, it is an important factor in the development of chronic idiopathic hypochromic and other anemias, of pellagra, of arthritis, and of certain gall bladder infections.

When a patient is known to lack hydrochloric acid in his stomach contents, he should be watched carefully for these more serious diseases; he should be instructed as to proper mouth hygiene, the avoidance of irritating foods, and the careful chewing of his food; he should, on the slightest evidence of digestive trouble, have a routine physical examination, together with blood studies and an x-ray investigation of the stomach.

PYELITIS AND URETERAL STRICTURE*

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Some months ago Dr. Mayerberg asked me to address this Society upon the subject which he has announced. I am glad to do so, for I feel that it is a subject which requires some emphasis. The idea of ureteral stricture was first conceived by Hunner some twenty years ago. In spite of the fact that he has talked about it much, it has been rather slow in permeating the profession. Everyone realizes the importance of drainage in surgical infections, but in urology its importance is not as generally appreciated. Even many urologists in good standing apparently fail to realize its importance, if one is to judge by their method of handling certain of these cases.

As to the incidence of urinary tract infections, one can gain some idea from the records of some of the larger hospitals. At the Johns Hopkins Hospital, one out of 76 admissions is due to kidney infection; at the St. Louis Children's Hospital, one out of 40 admissions. Out of 2100 cases of kidney infection in various hospitals 1191 were in adults and 909 in children. Kidney infection is about twice as frequent in females as in males. One great factor in females is pregnancy, but if we subtract the cases occurring during pregnancy and the puerperium we still find the disease about a third more frequent in women. I believe that the shorter urethra is a factor in the greater incidence in the female. This is particularly the case during infancy, when the genitalia are frequently bathed in feces. It is interesting to consider the incidence of urinary tract infection in the various decades. It occurs frequently in the first decade of life, but takes a sharp drop in incidence in the second decade. Then comes the third and fourth decades, in which pregnancies are frequent in women and venereal infection in men. Accordingly there is an increase in incidence. The decade from 40 to 50 may be considered the calm before the storm. Childbearing is for the most part over, venereal infection is less frequent, and prostates have not yet begun to enlarge. From 50 years on there is an increase in incidence in both sexes, associated with prostatic enlargement in the male and cystocele and prolapse in the female.

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Considering these infections from the point of view of the invading organism, we find the colon bacillus responsible in 80 to 90% of the cases. The remainder are due to the staphylococcus aureus and albus, streptococcus, and rarely B. typhosus and others. However, when we name the organisms recoverable in the urine we have told only half the story of the relation of pyelitis to infecting organisms. In doing urological work one cannot but be impressed by the relation of urinary tract infections to infections elsewhere in the body. A history of acute tonsillitis or quinsy is very common preceeding pyelitis, especially in children. How frequently one obtains the history of burning and frequency of urination coming on during acute respiratory infections. Then, too, in the more stubborn chronic urological infections one sometimes fails to see improvement until tonsils are removed, sinuses drained, or a tooth removed. These clinical experiences cannot help but impress one with th eassociation between urological infections and those in distant parts of the body, notwithstanding the fact that the organism recoverable from the urine is not the one responsible for the tonsilitis, sinusitis or the apical dental abscess. One may conjecture as to the modus operandi by which a colon bacillus infection of the kidney complicates a streptococcal infection of the throat, but one cannot be blind to the clinical association of the two.

Our knowledge of the actual route by which infection takes place is also very incomplete. The prevailing theories may be enumerated as follows:

1. Hematogenous, i. e., an infection from the blood stream to the kidney and thence descending to the bladder.

2. An ascending route from the bladder urine to the kidney pelvis either via the lumen of the ureter or via the lymphatics.

3. Direct lymphatic extension from the bowel to the kidney. The question is still a moot one. The most generally accepted theory is the hematogenous one. Crabtree has been one of the champions of this theory and cites one case which he feels is conclusive. A patient with acute retention was found to have sterile urine. A retention catheter was inserted. On the 7th day the patient began to have fever and the blood culture was positive. The urine was sterile. Later the patient developed a chill and pain in the kidney region. The urine culture was then positive and the blood negative.

Although hematogenous infection undoubtedly takes place there is also much evidence to show that infection of the kidney pelvis may also be an ascending infection. This history of bladder symptoms several days before the development of the symptoms of acute pyelitis is suggestive of this path of infection but the following case of my own observation is almost conclusive. A vaginal fixation of the uterus was done upon a patient with an uninfected urine, and repeated catheterizations were necessary over the first week. At the end of that time she developed burning and frequency of urination, and the urine contained much pus. It had obviously been infected by repeated catheterizations. She was afebrile, and allowed to get up on the 14th post-operative day. On the 19th post-operative day she was taken with a chill, high fever, pain in the right flank, and ran a typical course of acute pyelitis. This then, obviously, is a case of ascending infection, whether via the lumen or via the lymphatics no one can say. Those opposed to the theory of ascending infection cite the fact that in doing cystograms there is practically never a reflux into the kidney pelvis through a normal bladder, and maintain that the oblique course taken by the ureter through the muscular bladder wall produces sufficient valve-like action to prevent back flow. But aside from the neurogenic group, where reflux is common, reflux can sometimes be demonstrated in chronic tuberculous and non-tuberculous infections of the urinary tract. In many of the cases of suspected ascending infection the bladder infection has been present for a considerable period of time. Hence, we are no longer dealing with a normal bladder and absence of reflux in cystograms of normal bladders does not hold as an argument against the ascending theory in infected bladders.

Franke and Stahr have shown that the lymphatics of the descending colon pass over the capsule of the right kidney and that the deep lymphatics of the kidney communicate with those of the capsule. This arrangement of the lymphatics together with the great frequency of colon bacillus infection suggests the theory of direct invasion of the kidney through this lymphatic route. This theory is difficult of proof. My personal experience bearing on the theory is limited to a few unsuccessful attempts to rid the patient of a persistent colon bacilluira by changing the intestinal flora by feeding cultures of B. acidophylus.

Regardless of how infection gets into the kidney pelvis let us consider what takes place when it gets there. Inasmuch as we do not remove kidneys for acute pyelitis, our chances to study the acute changes pathologically are limited and our knowledge of the acute process must be gained largely by deduction on the basis of our findings in the chronic specimens which we study. The persistent high temperature, chills, kidney pain, toxic condition of patients with acute pyelitis *suggests* stasis and resulting absorption. Inasmuch as we do not advocate the passage of ureteral catheters during the acute stage of the disease, I cannot from personal experience, state the incidence of ureteral obstruction cystoscopically in this stage of the disease. We refrain from this instrumental procedure because experience shows that it is seldom necessary to put patients through this unpleasant procedure while acutely ill. However, Caulk, who regularly catheterizes the ureters of patients during the acute stage, reports stasis in 80%. This may be explained on the basis of a pre-existing localized stricture in the ureter, but certainly in many cases the obstruction results from a continuation of the inflammatory process of the kidney pelvis into the ureter. This acute ureteritis results in edema and swelling of the mucosa, causing temporary impairment of drainage at the anatomically narrow points. This acute inflammation usually subsides within several days, the kidney pelvis begins to drain more freely and the patient recovers from the acute symptoms. The pyuria may clear up promptly and the patient have no further attacks. These cases which do clear up permanently suggest that drainage of the kidney pelvis is satisfactory following the subsiding of the acute ureteritis. On the other hand, the pyuria at times fails to clear up, and in these cases one can often demonstrate ureteral narrowing by means of the ureteral catheter and wax bulb, together with pyelography. It is in cases such as these that dilatation of the stricture offers the best chance of clearing up the infection and frequently relieving the patient of a chronic discomfort in the kidney region. If the infection cannot be cleared up, and it must be admitted that this is sometimes the case, the patient can often be kept free from recurring acute attacks and comfortable by ureteral dilatation. I shall endeavor in the remainder of the paper, by case histories and the demonstration of pyelograms, to emphasize some of the points about which I have been speaking.

Case 1, B. T., aged 12, was first seen by me in November, 1930. At that time she gave a history of recurring attacks of pain in the right groin and back, nausea, vomiting, and temperature up to 100°. These attacks occurred at intervals of one to three weeks. The child had been unable to attend school. Pyelogram showed considerable dilatation of the right kidney pelvis and ureter, which was constricted just before entering the bladder. Cultures from bladder and right kidney showed B. coli. The ureter was dilated with catheter and wax bulb. During the following year patient had no further attacks of pyelitis, and cultures taken at intervals between January 1931, and June 1931, showed no growth. She has remained free from symptoms since.

Case 2, K. M., aged 7 years, was first seen by me in December, 1932. Under the care of a competent pediatrician she had had two severe attacks of acute, left-sided pyelitis in the previous two years. The mother of the child gave a history of two attacks of a similar nature at 2 years of age. Because the pyuria had persisted six weeks following the last attack of acute pyelitis I was asked to investigate the urinary tract. Following the acute attack the child had been clinically well. I found an obstruction in the left ureter a few centimeters above the bladder, and a moderately dilated water. Kidney pelvis appeared normal in the pyelogram. Culture from the left kidney showed B. coli. After two ureteral dilatations the culture from the left kidney became negative and has remained so since. Four dilatations were necessary to bring the ureteral lumen up to normal calibre. The child has been in excellent health since.

Case 3, P. M., aged 9½ years, was first seen by me in June, 1932. Her history dated from her third year, when frequency of urination was noted. She ran an elevation in temperature off and on for a year, and pus was noted in her urine constantly. At 4 years of age a tonsillectomy was done; the pyuria cleared up and the general health of the patient improved. At 6 years the patient had the grippe. Following this the temperature persisted and pyuria was again noted, which finally cleared up. At 9 years she again had the grippe and there was a recurrence of the pyuria. Six weeks before I saw the patient she had a streptococcal infection of the throat, followed again by pyuria and a persistent low grade temperature. During this time there was one acute attack with pain in the left side of the abdomen. There was never any right-sided pain. The patient was cystoscoped, and bilateral stricture with hydroureter found on pyelographic study. The calyces were blunted in the left kidney pelvis. Culture from the right kidney showed a B. coli, and from the left kidney no growth. The differential phthalein showed an output of 30% from the right kidney and 15% from the left kidney, in one-half hour. The strictures were dilated by several treatments over a period of several weeks. The infection in the right kidney cleared up promptly and the patient has had no further attacks of pyelitis or persistent temperature. She has gained in weight, has missed no school since the first series of treatments and is an apparently healthy child for the first time in several years.

Case 4, M. L., aged 8, was first seen in October, 1932. Following an attack of quinsy she continued to have a temperature intermittently for a few days at intervals of from four to six weeks for three years, with pain referable to the right kidney region. Tonsillectomy was done two years before. Cystoscopic investigation showed bilateral stricture with hydroureter. Urine from the right kidney showed B. coli, but was sterile from the left kidney. Both ureters were dilated. The patient has just returned for a check up, after six months. The urine from the right kidney is still infected, but the child has been free from symptoms, has gained weight, and has missed no school since treatment.

The above four cases demonstrate several points upon which I wish to lay emphasis.

1. Case 2 demonstrates the advisability of a thorough urological investigation in all cases of *persistent* pyuria, even when the patient is clinically well. By persistent pyuria I would arbitrarily say a persistence for six or more weeks after the acute attack of pyelitis. It is my belief that a history similar to case 2 of recurring pyelitis calls for a cystoscopic investigation even though the urine clears up entirely between attacks.

2. Cases 3 and 4 demonstrate the frequent bilateral nature of stricture of the ureter even when the symptoms are unilateral. At times the "silent" side may present the more serious lesion. I have discovered totally nonfunctioning kidneys due to stricture and back pressure which have never given the patient a minute of pain.

3. Cases 3 and 4 show the clinical association between infections in the respiratory tract and pyelitis. In case 3 the pyuria cleared up temporarily following tonsillectomy, but there were two exaccerbations following the grippe. Final permanent clearing up did not result until good drainage was established. In case 4 the trouble all began as a sequela of quinsy.

4. Cases 3 and 4 demonstrate the possible association of stricture of the ureter with sterile urine. In fact, in case 4 the densest stricture occurred on the left, from which kidney sterile urine was obtained.

Having shown you the above four cases, which fortunately came to treatment before much kidney damage was done, I now wish to show you a small series of cases in which treatment was not undertaken early enough.

Case 5, D. D., aged 8 years, was first seen in August, 1928. The mother reported that she had always been a sickly child. She had had many attacks of middle ear disease since early infancy. The mother dated the child's kidney trouble to three years before, when, following measles, she began to have pain in the left flank and temperature for a few days about every month. Pus had been found in the urine repeatedly. Cystoscopic investigation demonstrated a non-functioning pyonephrotic kidney on the left, with a dense stricture in the upper part of the ureter near the kidney pelvis. The right kidney was normal. After a few unsuccessful attempts to enter the right kidney pelvis and a persistence of the symptoms a left nephrectomy was done. The specimen removed was a pyonephrotic kidney with a dense stricture at the uretero-pelvic junction. The patient has been in good health since.

Case 6, M. P., aged 29, was first seen by me in May, 1929, complaining of burning and frequency of urination, and pain in her left side since an acute illness which she was told occurred at the age of 3. Because of this pain she had become addicted to morphia. There was marked pyuria but she refused cystoscopic examination. Finally, in 1931, she was cystoscoped. The left ureter could not be catheterized more than a few centimeters, when an impenetrable obstruction was encountered. Differential phthalein showed that there was no function in the left kidney, but the right was secreting 45% in thirty minutes. A flat plate showed a linear shadow in the general course of the lower end of the ureter beginning at the tip of the obstructed catheter. Obviously there had been calcification in the wall of the infected ureter. A nephrectomy was advised, and the left kidney was found to be a very small pyonephrotic sac. Obviously the kidney had lost its function in infancy.

Case 7, M. K., aged 26, first consulted me in September, 1931. She thought herself to be in good health, but in routine urine analysis for insurance pyuria was noted. She had never had any pain in either kidney region. Cystoscopic examination demonstrated a normal kidney on the right, with a 30% phthalein excretion in thirty minutes. On the left, a catheter could be introduced only two centimeters when a dense obstruction was encountered. Sodium iodide was introduced into the catheter and a hydroureter and very small kidney pelvis with complete obliteration of the calyces were demonstrated in the plate. The left kidney had no function, and was infected with B. coli. A left nephrectomy was done removing a very small infantile, pyonephrotic kidney. Patient has been well since.

The above three cases all demonstrate the end result in untreated pyelitis of infancy, with stricture formation of the ureter. Fortunately the kidney function was compensatory on the opposite side in these cases and, although a kidney had to be sacrificed, the patients are well. It is reasonable to assume from our experience that these kidneys could have been saved had ureteral dilatation been instituted early enough. Our autopsy records show similar cases in which the condition was bilateral and unrecognized until the kidneys were too completely destroyed to be saved. The above cases are taken at random from my files but they could be duplicated many times. Although the cases here reported are of childhood, the same general principles of treatment are applicable to pyelitis in adult life. You may have noticed that I have not mentioned the matter of urinary antiseptics. The reason is that I have very scant faith in any of them. Drainage plays a far more important part in treating an infection in the kidney than does any known chemical preparation. None of the above cases 1 to 4 had any urinary antiseptic. Water was forced in each case, and when bladder symptoms were present the urine was alkalinized by taking sodium bicarbonate. This usually symptomatically alleviates the burning and frequency of urination to a certain extent, and sometimes completely.

Sounds familiar—yet we found it in J. A. M. A. for March 17th:

IN BUSINESS

Discovered by F. F. S. in the Aztec (New Mex.) Independent

Dr. A. L. Burnett of Durango, said to be ranked as one of the three greatest surgeons in the United States, was a business visitor in Aztec Saturday.

CANCER COMMENT

Irradiation in Treatment of Cancer of the Breast

Marion L. H. Freeman*
Wilmington, Del.

The employment of irradiation in the treatment of cancer of the breast is difficult to evaluate because of changing technic of application. There are, however, several careful and interesting comparisons which lead to the conclusion that irradiation has an important place in the modern treatment of breast cancer.

There is not, in the opinion of most authors, sufficient evidence that irradiation can be successfully substituted for surgery in any cases excepting those which are considered primarily inoperable, in which event the palliative effects have been excellent. Irradiation alone is useful in cases which are known to be poor surgical risks due to advanced age, cardiac disease, etc.

In a series of cases reported by Westermark in Acta Radiologica, **II,** 1, 1930, 162 were given combined surgical and irradiation treatment. For comparison, a study of results obtained by surgery alone was made. The surgical statistics showed a five-year freedom from symptoms in 16.8 to 25.5% of the cases. In the cases irradiated postoperatively there was a corresponding freedom from symptoms in 29.3%, while in those treated preoperatively 40% were symptom-free at the end of five years. 9.8% of cases radiologically treated for recurrences and metastases showed freedom from symptoms after a period of observation lasting more than five years. Local recurrences were much less frequent after combined surgery and irradiation than after surgery alone, and there was a much longer interval before the distant metastases were manifested.

Quick, (J. A. M. A., **101,** 2091, 1933), says "Before an extensive program of irradiation or surgery in operable breast concer is assumed, a meticulously careful radiodiagnostic check-up should be made of the chest and skeleton. The chief value lies in an early and permanent record for subsequent comparisons which symptoms may call for."

Other factors of importance in the appraisal of a case are the histologic character of the growth, its size, and location, its duration, the presence or absence of axillary metastases, the age of the patient, and the presence or absence of anemia.

Quick also says, "Whatever agent, method or combination of x-rays and radium with or without surgery, is decided on, no fixed routine plan is desirable. Adherence to fixed principles of therapy, rather than to fixed technical details is the important factor.

Statistics prove that postoperative irradiation has improved five-year results, and that preoperative irradiation is probably of even greater relative value. Both preoperative and postoperative irradiation should be employed in all cases of breast cancer treated by radical mastectomy.

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*Secretary-technician of the Delaware Tumor Clinics.

WOMEN'S AUXILIARY

To the Members of the Medical Society of Delaware and the Woman's Auxiliary of that organization:

It is my very earnest desire that the medical profession of my own State shall be informed of my responsibilities and activities as President-elect of the Woman's Auxiliary to the American Medical Association. Fully conscious and deeply appreciative of every honor that the Delaware and the National Auxiliary have conferred upon me, I have requested the printing of my Annual Report to the National Auxiliary in the Delaware State Medical Journal.

If anything that I have done meets with your approval, then I shall have been more than repaid for this service to that profession with which I have been closely associated since the day of my birth.

Mildred Hutton Tomlinson.

Report of the President-Elect of the Woman's Auxiliary to the American Medical Association

As your President-elect for the past year, it has been my very great privilege to feel that I have enjoyed the confidence of our beloved President, and I have conscientiously tried to merit that confidence. I have at no time made any move without her approval. During the year, I have attended the Delaware State meeting in October, and later in that same month spent a day in Cleveland with Mrs. Blake making preparations for this Convention. In December, I attended the Camden County (N. J.) meeting, and in January visited Mrs. VanNess in Newark. On Washington's Birthday I went to the Birthday Luncheon of the Montgomery County (Pa.) Auxiliary. In April I visited the Philadelphia County (Pa.) Auxiliary at the time of their all-day Health Institute. On May second I was a guest of the District of Columbia Auxiliary at their annual meeting and luncheon; and on May 14th attended the New York State Medical Society meeting and spoke before the House of Delegates, and at an informal luncheon attended by wives of physicians. On June 6th I was the guest of the New Jersey Auxiliary at their annual meeting and luncheon in Atlantic City. I have written greetings for the Delaware and the Pennsylvania State Medical Journals, and for the Indiana Auxiliary Year Book. I have answered all letters, written Dr. Olin West offering my co-operation during the year of my Presidency and asked for suggestions, and chosen my National Board.

I have worked with health programs of other organizations, always subject to approval of the Medical Society of Delaware. I have served as a member of the Executive Committee of the Delaware Anti-Tuberculosis Society, and Chairman of the Board of Sunnybrook Cottage, its Preventorium for children. I am working at present with its Executive Secretary on a health program which will use the Auxiliary Study Envelopes for material. I broadcast for the President's Birthday Party in Wilmington, the receipts of which went to Sunnybrook. Also, for the Christmas Seal Campaign, and the Home Safety Committee of the Delaware Safety Council, and secured the speaker, Dr. Louis Clerf of Philadelphia, for the Home Safety luncheon, and procured broadcasting material for the Home Safety Week from the American Medical Association. I am serving as Chairman of the Public Health Committee of the City Federation of Women's Clubs and Allied Organizations. I attended mental hygiene and eugenics meetings with much interest. I represented the Delaware Auxiliary on the Woman's Joint Legislation Committee, and worked for much-needed tuberculosis legislation, and assisted with the Red Cross campaign. Much of this is local, but these combined local efforts make one great whole movement toward fewer unnecessary deaths from accident, disease, and ignorance, and toward the spread of authentic health information.

Finally, may I speak of the tremendous value the office of President-elect has for its incumbent. The year of preparation for the office of President is one full of opportunity, and is a wonderful period of training for that office. I owe a great debt of appreciation for the kindness and interest shown on my behalf by Mrs. Blake and the members of her National Board. We have been truly blessed by those who have guided our destiny thus far, and it has been a rare privilege to work with them and you.

Respectfully submitted,
MRS. ROBERT W. TOMLINSON.

American Library Service

Every person at one time or another is confronted with the problem of wanting a particular book that is no longer available through the regular publishing or bookstore channels. When a volume has reached that stage of scarcity, it is designated as "out-of-print," and commences to lead an elusive existence.

The American Library Service, of 1472 Broadway, New York City, organized thirteen years ago a world-wide system to track down and snare out-of-print books in any language and on any subject. They have been singularly successful in this field. This service also extends to back numbers of all magazines.

Whether the book is technical or historical, genealogical or literary, or just a school book through which a grown-up wants to recapture his youth by re-reading, the American Library Service has built up a system adept at finding it.

The American Library Service also conducts special departments for the purchase of books, whether a single volume, or a complete library, as well as autographs of literary or historical value. It also supplies current books of all publishers.

EDITORIAL

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Articles sent this Journal for publication and all those read at the annual meetings of the State Society are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

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VOL. VI JUNE, 1934 No. 6

RE-PRINTS, ETC.

The frequent inquiries by authors concerning the reprints of articles published in THE JOURNAL prompts us to state briefly the policy of this publication.

First—THE JOURNAL gives no reprints to any author; they are purchased directly from the printer. Galley proofs will be sent to all authors, and when this is returned arrangements for reprints should be made with the printers. The cost is nominal.

Second—THE JOURNAL pays one-half of the cost of illustrations, up to a reasonable number, or to a reasonable sum. A recent national survey shows that $15-$20 in cost and 4-5 in number would be considered liberal.

Third—All manuscript and other material intended for publication in the current issue *must* reach the editor by the fifth of the month. Copy arriving later than this may have to wait a month, or be "killed."

The *Pennsylvania Medical Journal* for April 1934 carried a page of 40 gummed stickers, to be attached to the doctor's bills—a most unique form of lecture—as follows:

WARNING

In the presence of abdominal pain

Never give a laxative or physic
Give nothing by mouth
Call your family doctor

Abdominal pain, cramps, or soreness
which lasts for four hours
is usually serious

This warning is published by The Medical Society of the State of Pennsylvania

---

EPISTLE TO AN EXECUTOR

Dear Sir:

About the three dollars which I owe Dr. ———. I want to explain why it hasn't been paid; the Dr. gave me three lots of medicine for the nerves. I always thought the doctor was so old he gave me something he hadn't ought to. When I got in bed the bed would go around and every time I would turn over the bed would go around and the same way when I bent over everything would go around. When I explained it to the doctor he said it came from eating buckwheat cakes.

I quit eating them and the thing kept right up but when I quit taking the medicine the thing stopped. I haven't never bin that way sence or never was that way before.

The Doctor sent me a bill once but I didn't pay it.

I don't think I should pay for a medicine that done me more harm than good.

You will see by the doctors books that I always paid all old bills.

EPILOGUE—Record marked, *"Paid in full."*

DELAWARE ACADEMY OF MEDICINE

Lovering Avenue and Union Street
Wilmington, Delaware

LIBRARY RULES

Control

1. The facilities of the Library shall be under the control of the Library Committee, and will be available to the members of the Academy and visitors at such hours and under such rules and regulations as the Committee may determine. These are subject to change without notice.

General

2. The Library shall be open as follows:

Monday	Tuesday	Wednesday
10-5	1-5 7.30-10	10-5
Thursday	Friday	Saturday
10-5	1-5 7.30-10	10-12

3. No one shall be permitted to have access to the Library out of Library hours, unless accompanied by a member of the Library Committee or some other Library official.

4. The use of ink, including fountain pens, is not permitted.

5. Loud talking or other unseemly conduct is not permitted.

6. Members only shall be permitted the use of the study rooms, or to have access to the book-stacks; except, that upon the request of a member, with the endorsement of a member of the Library Committee, the use of a study room may be granted to a visitor for one month from the date of application.

7. Any fine that any member or visitor may incur shall be paid to the librarian immediately upon notice of assessment.

Member Borrowers

Books

8. A member shall be allowed to borrow at any one time not more than two volumes of books or bound periodicals, and for each volume borrowed shall file with the librarian a borrower's slip. When any volume is returned to the Library the corresponding slip shall be returned to the borrower.

9. A fine of one dollar or more shall, at the discretion of the Library Committee, be imposed upon any member who takes a book from the Library without signing a borrower's slip.

10. A volume borrowed may be retained for two weeks. If, at the expiration of this time, no request for said volume is on hand, the borrower may renew for a second two weeks, and in like manner, for a third two weeks, after which there shall be no further renewals.

11. If any member retains the book or books borrowed by him longer than two weeks, without renewal, he shall pay a fine of twenty-five cents for every week or part thereof that each volume is so retained. If a borrower loses or damages Library property he shall replace it, or pay the value of it, or of the set to which it belongs.

12. Members engaged in a special research may, on application to the librarian, obtain a permit to take out more than the number of books allowed above; and may be granted more than the two renewals allowed above.

13. Indexes, catalogs of libraries and museums, dictionaries, dispensatories, expensively illustrated or very costly books, or any volume that cannot be replaced if lost shall not be loaned without special permission from the Library Committee.

Journals

14. Journals, unbound and not to exceed four in number, may be taken out for one week; and if, at the expiration of this time no request for said journal is on hand, it may be renewed for a second two weeks. For each journal borrowed a borrower's slip shall be filed with the librarian, which shall be returned to the borrower when the journal is returned to the Library.

15. Unbound books and current numbers of journals and books not formally presented, may be loaned at closing time, to be returned by 10 a. m. the next day. If not returned by that hour (or by the opening hour if that be after 10 a. m.) the librarian shall send for them at the expense of the member borrowing, and a fine of twenty-five cents per book or journal shall be imposed for each day, or fraction thereof, that said books and journals borrowed under this rule are retained over the time allowed. For each book or journal so borrowed a borrower's slip shall be filed with the librarian, as above.

16. If a volume or journal taken out by a member is wanted by another member, no-

tice to this effect will be sent out at once, and it is expected that the volume or journal will then be returned at the earliest convenience of the original borrower. This Rule is a request for promptness and courtesy, and is not to be construed as abridging the privileges of the original borrower.

17. No person, whether a member or visitor, shall loan books or journals borrowed from the Library to any other person.

18. Books and journals shall be sent to members of the Academy living outside of the city at their expense and risk, subject to the approval of the chairman of the Library Committee.

Visitor Borrowers

19. A visitor may be introduced by a member, who shall thereby become responsible for any loss that the Library may incur through the visitor's action. The member shall state whether he wishes the visitor to have the privilege of the reading room only, or of borrowing books and journals, under the usual rules, as well; and shall state the length of time that he wishes the privilege to last. If a book or journal, borrowed by a visitor, is wanted by a member, the visitor shall be notified, and shall return the same within three days of receipt of notice. A fine for failure to do so shall be imposed at the rate of twenty-five cents per day per book or journal. Volumes and journals borrowed by a visitor shall not be counted against the amount allowed the member who introduces the visitor.

21. The name and address of every visiting reader or borrower shall be registered in a book kept for that purpose.

20. Visitors who are strangers and unknown to the members, and who wish to consult the books and periodicals in the Library may, at the discretion of the librarian, be permitted the same privileges as is included in a card of introduction, except that the time shall be limited to one week.

Inter-Library Privilege

22. Books may be borrowed through this Library from other libraries granting this privilege, or may be loaned to such libraries under the same provisions. The library borrowing for the individual is responsible for the safekeeping and return of the volume within two weeks, and pays all transportation and insurance charges. The person using this privilege, therefore, must advance a sufficient guarantee to our librarian, meet all expenses incurred, and shall not remove the volume from the Library rooms. Books that cannot be replaced shall not be loaned under this system.

23. These Rules shall be printed and posted in conspicuous places in the reading and study rooms.

MISCELLANEOUS

Newspapers and Leukemia

The great amount of recent publicity given throughout the country to leukemia patients, while it serves admirably as an educational program for the laity, may have some unpleasant repercussions in the profession. Dr. William H. Kraemer, of Wilmington, who is the director of the Tumor Clinic of the Jefferson Hospital, Philadelphia, unwittingly finds himself the victim of some of this premature and embarrassing publicity. For five years the Jefferson Clinic has supplied various clinics and clinicians with their experimental preparations, always with the ironclad rules that (1) there shall be absolutely no publicity; (2) there shall be absolutely no fee charged; and (3) there shall be absolute adherence to the advised technique.

On June 5, the clinic received a request from a physician in Memphis, Tenn., for a preparation to use in a case of myelogenous leukemia. After a conference the staff decided to honor the request, and the material was sent at once by air mail, Dr. Kraemer sending detailed instructions by telegraphed night letter. The medicine arriving without instructions, Memphis tried during the evening to locate Dr. Kraemer. Somewhere, somehow, there was a leak in these communication efforts, for when the night letter arrived at the Memphis telegraph office the next morning, there was an array of reporters on hand for "the big story." The Journal is glad to state Dr. Kraemer's innocence of any attempt to exploit himself, his clinic, or the clinic treatment and to express its regret at the chagrinning situation he finds himself in. His own statement follows:

> "Because of publicity given a case of leukemia in Memphis, Tenn., for the past week from dif-

ferent parts of the country we have received requests to supply that treatment which is being used in the case in Memphis. Publicity given to that case and its new form of treatment, which we have been endeavoring to develop over a period of five years, may be very misleading to the medical profession for the following reasons:

"This treatment can only be applied in myelogenous leukemia. It is still in its research stage. Technical experience for its successful administration is necessary, and it should be used only by those who are thoroughly familiar with the intravenous injections of metallic colloids, which constitute the treatment. At present there is no supply available for distribution commercially. The application of this treatment for leukemia therefore is dangerous and could do much harm to the patient unless the physician is thoroughly experienced in its application. In the instance of the case of leukemia in Memphis, its treatment was made possible because of the personal experience and knowledge of this disease that the physician treating this case has had with leukemia and this new form of treatment.

"As to the treatment itself, we do not deem it advisable at this time to make any detailed statement. We simply reiterate: it is still in its experimental stage; it is not available commercially; it is merely being furnished to certain institutions for clinical research."

On June 13th Delaware's Auxiliary past-president, Mrs. Robert W. Tomlinson, was installed as the national president of the Woman's Auxiliary of the A. M. A. This is a great honor, and a great responsibility, but also a great opportunity; we have no doubts as to the outcome. Anyway, who's afraid of the old 13?

BOOK REVIEWS

New and Non-Official Remedies, 1934, containing descriptions of the articles which stood accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1934. Cloth. Pp. 510. Price, $1.50. Chicago: American Medical Association, 1934.

New and Non-official Remedies, 1934, has the same pleasing format and helpful mechanism that has characterized it in past years. The enrichment of the indexing, started a few years ago, is continued and its value even increased by some desirable simplification of cross references.

The Council has made the usual careful revision of the book. The general article Lactic Acid-Producing Organisms and Preparations has been practically rewritten. The chapter on Arsenic preparations has undergone some revision, especially in the statement concerning Neoarsphenamine. The descriptions of Chiniofon and Vioform have been revised in the light of recent developments in the treatment of ambeiasis. The article on Ethylhydrocupreine has been revised to delete references to Optochin Base, which has been omitted; Optochin Hydrochloride has been retained, being recommended only for external use. The description of Typhoid Vaccine has been revised to give the dosage of the combination of typhoid and paratyphoid organisms and to mention the use of typhoid vaccine in non-specific protein therapy. A number of revisions of the Council's Rules have been made, particularly with reference to the names of products, which is one of the most frequent and troublesome of the problems with which the Council has to deal. Comparison with last year's volume will show that revisions of more or less importance occur in many other chapters.

Among the preparations newly included in this volume are: Aminophylline, a double salt or mixture of theophylline and ethylenediamine, with the advantage of greater solubility over other theophylline preparations; the new alum precipitated diphtheria toxoid; Neo-Iopax, a new medium for intravenous urography; Benzedrine, an ephedrine substitute; serums containing type II pneumococcus antibodies, which the Council has recently recognized as worthy of clinical trial in view of improved preparations and technic; Autolyzed Liver Concentrate and Extralin, two new liver preparations for use in the treatment of pernicious anemia; Metycaine, a new local anesthetic; and Sodium Morrhuate, a salt of the fatty acids of cod liver oil, proposed for use as a sclerosing agent.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1933. Cloth. Pp. 188. Price, $1.00. Chicago: American Medical Association, 1934.

The main bulk of the volume, which is, incidentally, considerably increased over that of recent annual volumes, is taken up with reports on products which the Council has found unacceptable for inclusion in New and Non-Official Remedies. Of special note are the reports on Alpha-Lobelin, Clavipurin, Diampysal, Euphydigital, Guphen, Niazo, Omnadin.

A feature of marked current interest in this volume is the preliminary report on Alpha-Dinitrophenol, the new drug for acceleration of cellular metabolism. The Council voices a warning on the dangers attending the use of this drug; this warning has been increasingly justified in reports of fatalities since the appearance of the Council's report in July of last year. Other preliminary reports which make this volume one of the most interesting issued by the Council in recent years are those on Dilaudid, a new narcotic drug related to morphine; Fuadin, a new antimony compound for use in the treatment of bilharziasis and granuloma inguinale; and Hippuran, a new product for intravenous and oral urography. The comprehensive and definite special report on estrogenic substances furnishes a much-needed review of the present status of such products in gynecologic therapy. The Council insists upon the doctrine that basic laboratory investigation of these substances should precede clinical use.

Of interest to hospital authorities, especially in connection with the book Hospital Practice for Interns recently issued by the Council in collaboration with the Council on Medical Education and Hospitals, is the special report, the Hospital Formulary, by Hatcher and Stainsby of New York. It outlines a plan characterized by the highest regard for the principles of rational drug therapy. Of more general interest is the Council's second report on the intravenous use of barbital compounds which is the result of a questionnaire sent to representative physicians. In view of the answers to the questionnaire, the Council reaffirmed its previous decision concerning the limitations of intravenous use of barbital compounds; namely, that these preparations should be administered intravenously only in a limited number of conditions in which administration by other routes is not feasible. The report carefully details these conditions. The lengthy report on the omission of Pyridium is an outstanding example of the meticulous fairness characteristic of the Council's treatment of the manufacturers of commercial preparations. In connection with the omission of Pyridium should be noted the report which declares Azophene (Mallophene) not acceptable. This product has been shown to be identical with Pyridium and the Council considers the claims for its usefulness as a local, general, or urinary antiseptic as unwarranted, as are those for Pyridium.

A Better Method of Treating Fractures of the Jaws

Frederick B. Moorehead, Chicago (*Journal A. M. A.*, May 19, 1934), employs elastic traction in practically all cases in which reduction is required. The mechanism employed in reduction frequently serves equally well for satisfactory immobilization. Under traction the parts are brought into proper relation and held with slight movement, which materially aids in repair. In the common type of jaw fracture the short fragment is pulled up by the masseter internal pterygoid and temporal muscles, while the long fragment is pulled down by the mylohyoid, digastric geniohyoid and external pterygoid. A flat or round wire is molded with a pair of pliers to fit the arch and is fastened to the neck of the teeth with wire or silk ligatures. Orthodontia rubber bands are attached to the wire on each jaw with silk ligatures. After two or three weeks the rubber bands may be removed to see whether occlusion is retained, without help, and if so the appliance may be discarded and a retaining appliance may be used if necessary. Total fractures of the upper jaw with downward and backward, downward and forward, or downward and lateral displacement are reduced best by a skull cap and chin support made with starch bandage, hooks and rubber bands. In a few days the upper jaw will be pushed up to a normal position. Forward, backward or lateral displacement is usually corrected as the jaw is pushed up. If, however, these displacements are not corrected, additional correction may be used by placing the patient's artificial dentures in the mouth and applying traction. In unilateral fractures of the upper jaw, with downward displacement an appliance is placed on the opposite side from the fracture and traction on the sound side will push the fractured jaw upward until full occlusion is reached. For holding lateral stumps of the lower jaw, following reaction of the anterior portion, rubber bands hold the jaw in occlusion with the upper jaw without fixing it. This simple appliance holds the stump or stumps in line during the process of healing and simplifies the introduction of a bone graft later.

Cyanide Antidotes

According to P. J. HANZLIK and A. P. RICHARDSON, San Francisco (*Journal A. M. A.*, May 26, 1934), experimentally effective in protective and resuscitative treatments of fatal cyanide poisoning and clinically useful, in order of decreasing efficiency, are a combination of sodium nitrite and sodium thiosulphate, sodium nitrite, methylene blue and sodium thiosulphate. Experimentally effective, but clinically inadvisable, is triose (glycerinic aldehyde). In mammals, including probably man, the antidotal actions in cyanide poisoning of the following are mediated predominantly through methemoglobin formation: nitrite-thiosulphate combination, nitrite, methylene blue and toluidine blue. Triose apparently forms cyanhydrine and is assisted by central stimulant actions. Thiosulphate is a direct oxidant of cyanide with formation of sulphocyanate. Some kind of direct action, in part at least, on mammalian tissues and cells, independently of methemoglobin, is postulated for methylene blue, and such action is predominant in antagonizing cyanide poisoning of simple physical and biologic systems. The most interesting of a number of ineffective agents are ethylene blue, which is chemically close to methylene blue, and dinitrophenol, a powerful metabolic stimulant and oxidant. Their ineffectiveness clearly indicates the specificity of methylene blue, the high combining chemical efficiency of methemoglobin, and the subordinate importance of tissue oxidation, at least as activated by dinitrophenol. Life tests for methemoglobin formation in certain species of animals are useless. There are procedures for and limitations of blood examinations, which are valuable in interpreting and transferring results to human cases of poisoning.

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THE DIAGNOSIS AND TREATMENT OF LESIONS OF THE CRANIAL NERVES*

Walter E. Dandy, M. D.
Baltimore, Md.

I have chosen the subject "disturbances of the cranial nerves" because they represent a field in which there has been great progress in the last ten years. I have chosen it also because these disturbances are common, are easily diagnosable, but are so frequently missed, and finally, because most of them can be permanently cured and with practically no risk.

I have in mind first, trigeminal neuralgia or trigeminal tic douloureux—perhaps more familiarly known as such—, (2) glossopharyngeal neuralgia or tic douloureux, (3) Ménière's disease, (4) the treatment of ulcerations in the mouth due to carcinomata or chronic inflammations that do not heal, (5) spastic torticollis, and (6) migraine.

Just a word about the differential diagnosis of pains in the face from which trigeminal neuralgia and glossopharyngeal neuralgia are to be differentiated in diagnosis. Ordinarily the diagnosis of trigeminal neuralgia is exceedingly easy. The moment you see an attack, or if you read about it in a letter, you know that it is trigeminal neuralgia. But there are times when it isn't so simple. There are borderline cases, and not infrequently patients are subjected to operations upon the assumption that the diagnosis is trigeminal neuralgia. On the other hand, patients with clear-cut trigeminal neuralgia are subjected to other forms of treatment when a correct diagnosis would provide the proper treatment at the beginning.

We recognize the following pains in the face: there is a steady, constant, twenty-four-hour a day pain that sits in one spot, and because it is so sharply localized it is called topalgia. The fact that it does remain so restricted means that it can't be an organic pain. Such is incompatible with any organic pain. The physiology of the nerves precludes such a possibility. Also, there are very few organic pains of any kind that persist with the same severity day in and day out for long periods of time.

This common type of pain is functional and many surgeons have erred in dividing the fifth nerve either peripherally or centrally for this pain, and, of course, as is true with all functional pains, they are only intensified by the procedure. Another type of functional pain and more common than the one of the topalgia type, is that which radiates over the entire face, either one side or both sides, to the back of the head, down the back of the neck and shoulders, etc. In other words, it is at once precluded from an anatomical or organic pain because it spreads far beyond the domain of any nerve in the face. It spreads from the fifth nerve distribution, with which it is very often confused, to the regions supplied by the occipital nerves and the brachial plexus, etc., so you would at once know that it is a functional pain. All operations intensify functional pains.

The functional pains are far more common than those of organic type. Usually there is the mental picture of the psychogenic individual. They have inability to sleep at night; the pains are constant over a period of twenty-four hours; they have nightmares, etc.

A migrainous pain is one which is quite characteristic. Usually of a hereditary type, i. e., transmitted from one generation to the other, they usually come on one side, in the back of the eye, and gradually intensify and spread throughout one side of the head, and remain restricted to that side. They last for hours or days. Frequently there is the telltale fortification work, phenomena, that goes with them, and this is evidence, I think, of a sympathetic disturbance perhaps constricting the vessels of the cerebrum which control the visual pathways.

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*Read before the Medical Society of Delaware, Wilmington, September 26, 1933.

In the past few years we have undertaken the treatment of migraine on the basis that it probably was referable to the sympathetic nerve system. The operation consists in the removal of the stellate ganglion through the removal of the first and second ribs along the thoracic column.

We have chosen those cases of migraine for operation that have shown very definite stigmata referable to the sympathetic system, such as ptosis, redness of eye, tears from one eye, flushing or perspiration on one side of the face. In other words, from those symptoms you know that during the attack there is an involvement of organic type involving the sympathetic nervous system. These cases, therefore, are not of the hereditary type; curiously, most of those of hereditary type are not so severe and they have not been willing to undergo an operative procedure. The number of cases and the time since operation have not been sufficient to make positive claims, but one patient has had no attacks in over three years.

TRIGEMINAL NEURALCIA:

There is usually no difficulty in making the differential diagnosis. Trigeminal neuralgia has these features: the attacks come on with extreme suddenness. They last for a few moments and disappear just as suddenly as they began; and between the attacks the patient is perfectly free of all symptoms. In other words, they are paroxysmal seizures.

A second characteristic of trigeminal neuralgia is that the pain is induced by sensory stimuli to the face, and in no other condition can attacks of pain be induced by such stimuli. In other words, if the patient brushes the teeth, swallows, or if a little blast of air strikes the face, or if he talks, the movements are enough (during the period in which he is susceptible) to bring on one of these perfectly characteristic and most fearful attacks of pain. For reasons we do not know, there are times when the patient isn't subject to these attacks, and again the period of susceptibility appears for no obvious reason.

The paroxysmal attacks are so appropriately called tic douloureux because they are sudden tic-like pains. In addition there is a steady type of pain, more appropriately called trigeminal neuralgia. It is distributed very sharply to the domain of the trigeminal nerve, usually to one branch, sometimes two or even all three branches, but the patient will always tell you that the pain never crosses the midline. It runs to the teeth, the tongue or the lips, and it never passes down the neck or back of the head. You know from the patient's story that it is an anatomical pain. It is much less common than tic douloureux. It is usually a constant, steady pain and persists for days. The treatment is exactly the same as for tic douloureux.

Glossopharyngeal neuralgia is much less common than trigeminal neuralgia. It also is of two types, the steady pain (neuralgic) and the paroxysmal pain (tic douloureux). Glossopharyngeal tic douloureux is much like the trigeminal except in the location of the pain, and yet it is a much more fearful pain. Of all pains, glossopharyngeal neuralgia is the worst. The pain is in the back of the throat and the back of the tongue, most commonly in the tonsillar fossa. The patient will tell you that there is a sharply defined area or trigger zone at the tonsils, and when that is touched these terrific attacks of pain will be set off. They radiate down the back of the throat to the ear and into the region of the tongue. These attacks are induced by swallowing or talking. During the pain or the period of susceptibility to pain the patient would be found with his head down on one side in order that the saliva may run out of his mouth, for he knows that when he swallows, the saliva must pass over the trigger zone at the tonsil and induce an attack; when it is absolutely necessary to swallow this position is the best possible to divert the saliva to the opposite side and away from the trigger zone.

At times it isn't easy to differentiate between glossopharyngeal neuralgia and trigeminal neuralgia, particularly when the pain is referred to the tongue or lower jaw, but there is a very simple differential test, namely, to cocainize the tonsil, tonsillar fossa, and the back of the tongue, i. e., the trigger zone which is so well recognized by the patient. If the pain is of the glossopharyngeal type, swallowing or rubbing the throat will no longer bring on the attacks. If the pain is trigeminal, cocainization will have no effect upon the induction of pain.

In 1891 the first practical operation was devised for trigeminal neuralgia by Hartley of New York and Krause of Berlin. They both approached the Gasserian ganglion through the temporal fossa, but the former attacked only the peripheral branches of the ganglion, whereas the latter was soon able to remove the ganglion itself and thus for the first time permanently cure trigeminal neuralgia. At first it was a very dangerous operation and carried a high mortality. Gradually, however, the procedure has been improved, notably by the suggestion of the great Spiller of Philadelphia, and his associate, Frazier, until it has become almost perfectly safe in skilled hands.

What are the liabilities that follow the Hartley-Krause operation or its modifications? First, there is the so-called neuratrophic keratitis; second, loss of the motor branch with its functions of mastication of the fifth nerve; third, a fairly high percentage of cases with ipsolateral paralysis of the facial muscles; and fourth, it is a difficult, tedious procedure through a bloody field. By far the most important ill-effect is the keratitis, which appears within twenty-four hours as a dull, lusterless cornea. Redness then follows, and a little ulceration. Unless the eye is carefully watched and protected the ulceration deepens; indeed the eyeball may be perforated, and in many cases it has been necessary to remove the eyeball. But even the mildest keratitis not infrequently handicaps the patient for the remainder of life, because the attacks of clouding cornea, with dimness of vision may recur with any little exposure to cold. Patients will gladly lose the eye, if need be, but if avoidable the patient gains tremendously.

Several years ago when, after the removal of acoustic tumors, the sensory root of the fifth nerve stood out in full view, the possibility of dividing the fifth nerve after elevating the cerebellum was recognized. It was tried and found to be easier than by the temporal route. Upon elevating the cerebellum, the sensory root was in full view. It was only necessary to surround it with a hook or knife to divide it. But at the time there appeared to be no other great advantage. However, as time went on it was found, empirically, that there were very marked advantages. Never did redness of the cornea follow the operation. In over three hundred operations to date there has been no instance of this, so that this distressing sequel for some reason, not then appreciated, was abolished.

Then too, the motor branch of the nerve was never injured because the motor branch was at a much greater distance from the sensory root than where it is reached by the temporal route. And finally, facial paralysis did not result, for reasons that will appear later.

Although one is not tremendously handicapped by the loss of the motor branch on one side, nevertheless, it is distressing because the mouth can only open partially making it difficult to get food into the mouth; and the jaw deviates to one side preventing the teeth from approximating. On the other hand, the loss of the motor branch of one side becomes a very serious matter if the patient happens to develop bilateral neuralgia, which is by no means uncommon. If a patient has lost the motor branch on one side the attack upon the other side by the temporal route would be exceedingly hazardous and scarcely defensible, for if both trigeminal branches were destroyed the patient would never swallow again. Since, by the cerebellar route, one does not fear injury to the motor branch, the trigeminal neuralgia of both sides can be cured and by a single operation, for with a bilateral approach such as is used routinely for the attack upon cerebellar tumors or by two independent unilateral approaches (which is preferable), both sensory roots can be divided at one sitting. This has been done eight times without mortality, or without the loss of one motor branch.

This operation for trigeminal neuralgia has now been used over two hundred times without a death.

A few years ago Frazier, in looking for improvements in the treatment of trigeminal neuralgia, came to the conclusion that the sensory root of the fifth nerve was divided into three parts, each corresponding with a peripheral division of the nerve. That, if true, would offer a very beautiful solution of the treatment of trigeminal neuralgia for it would only be necessary to divide one-third of the sensory root in order to cure the pain in one branch of the nerve.

We, too, can fractionally divide the sensory root by the subcerebellar exposure. Finally we found that if the posterior half of the sensory root was sectioned the trigeminal pain could be abolished and that there would be no practical change in the sensation in any part of the face. In other words, the sensory root was not divided into three branches accurately corresponding to the peripheral division of the nerve. The reason would appear to be, that special fibers in the sensory root are responsible for this characteristic type of paroxysmal pain. We do know that there are different fibers carrying heat, cold, touch and pain. In other words, each type of sensation has special fibers of its own, and since the pain is abolished in any one or all of these peripheral divisions by section of this part of the nerve, the pain fibers probably collect in a bundle in the posterior half of the nerve.

The only drawback to hemisection of the nerve is that the pain fibers are not consistent in this arrangement. There have been eight recurrences in three hundred cases. In young people it is such a small percentage that it is worth the risk of this percentage of recurrence in order to save the sensation of the face. In advanced age I think it is usually preferable to divide the nerve completely rather than run any chance of recurrence and the possibility of another operation. However, it is very easy to reopen the wound and divide the remaining fibers, if necessary.

Should all patients with trigeminal neuralgia be subjected to an operative procedure of this type? I say unequivocally yes, and at the earliest moment that the diagnosis can be made. Why? I have never seen a case of trigeminal neuralgia that was cured spontaneously. In other words, if a patient once has trigeminal neuralgia, it is a lifetime ordeal of suffering unless stopped surgically. Why, then, not cure it in the beginning? There is little to be said in favor of palliative treatment of any kind. Alcohol injected into a peripheral branch of the nerve has but a transient effect and must be repeated every year for the rest of life; and an alcoholic injection is very painful at best; it is in fact more severe than the operation which cures. One can also inject the Gasserian ganglion but it is much too dangerous. When the alcohol is injected into the ganglion (through the foramen ovale) which is simple enough in its execution, it is forced into the cerebrospinal fluid which surrounds the ganglion and is at once carried back into the posterior cranial fossa, paralyzing almost instantly all of the nerves on that side of the brain-stem. It is a dreadful sequence of events.

Just a word about the presumed relationship of infections of the sinuses and teeth and of the so-called focal infections to the causation of tic douloureux. So many of these patients, more in the past than now, but still far too frequently, have many or all of their teeth extracted and innocent sinuses opened and drained. Without fear of contradiction, I can tell you, that never does a case of trigeminal neuralgia arise from an infection in the teeth, sinuses or elsewhere. There is, therefore, no point in subjecting the patient to these unnecessary and harmful procedures. How can one be so sure? Because trigeminal neuralgia cannot result from a lesion of a peripheral nerve. Tumors, for example, along a branch of the fifth nerve never cause this type of paroxysmal neuralgia. Nor do tumors of the Gasserian ganglion. Either will produce severe pain, but never this characteristic paroxysmal pain. On the other hand, 10% of the cases of trigeminal tic douloureux have tumors or aneurysms along the sensory root.

In this respect there is a very close analogy between trigeminal neuralgia and epilepsy. Epilepsy cannot be produced by any lesion along the peripheral nerves. It can only result from a lesion in the cerebral hemisphere. Involvement of a higher neurone is essential for the production of any *paroxysmal* attacks.

By the subcerebellar approach the sensory root can be divided, either totally or subtotally, under local or general anaesthesia. The procedure is much simpler, easier and productive of far better permanent results. We have done many patients in the hazardous period of life between the ages of seventy and eighty-five without mortality.

The glossopharyngeal or ninth nerve is very small, i. e., about the size of the lead in a lead pencil. Using the same approach it is even easier to divide this nerve with a hooked knife, and never again will the patient have another attack of glossopharyngeal neuralgia —a pain of similar character but distributed to the sensory domain of the glossopharyngeal nerve, i. e., the back of the tongue, throat and tonsils.

Pain from Carcinoma of the Mouth

I should also like to bring to your attention the treatment of the distressing constant pain associated with carcinoma and chronic ulcerations of the mouth. As you know, both the fifth and ninth nerves supply sensation in the mouth. If the carcinoma is well forward and purely in the domain of the fifth nerve, one can inject alcohol into the third division of the nerve and stop the pain. But if the lesion extends to the back of the tongue and pharynx and along the tonsils, no alcoholic injection can be effective because the ninth nerve cannot be injected. These patients can be made comfortable for the rest of their lives by dividing the sensory root of both the fifth and ninth nerves, using, of course, the same cerebellar approach. Nor is the procedure as formidable as it seems. The operation can be performed under local anaesthesia: it requires only a moment or two to divide each nerve after the cerebellum is elevated, and there is less pain in the operation than from an alcoholic injection.

Meniere's Disease:

Another important and frequent disturbance of the cranial nerves is Ménière's disease. It has a characteristic syndrome. Here again there are paroxysmal attacks. Very suddenly and without apparent cause the patient will be stricken with terrific dizziness, associated with nausea, vomiting and tinnitus in one ear; and that ear is subtotally deaf.

Most textbooks carry the statement that Ménière's disease is due to a hemorrhage in the internal ear. That is a mistake. A patient couldn't possibly have a hemorrhage every time he has an attack of Ménière's disease. In the old literature epilepsy was regarded as an apoplexy, and so these conditions are regarded as apoplexies. Ménière unfortunately examined at necropsy a case of acute labyrinthitis which he confused with his own Ménière's disease. So far as I know there has been no necropsy report of Ménière's disease, so one can only infer its pathology. However, one can be quite certain that Ménière's disease has nothing to do with the external or middle ear, or their infections.

The treatment of Ménière's disease is the division of the auditory nerve, either partially or totally, on the side of the tinnitus and subtotal deafness. The results are just as absolute as those following division of the trigeminal nerve in trigeminal neuralgia. Never again will the patient have another attack of Ménière's disease. Usually the hearing which is lost by total division of the nerve is not of much practical value, but there are times when its preservation may be important. In the early course of the disease it would be extremely so. Then, too, a patient may be able to retain a position with subtotal deafness and lose it if deafness is total. Recently we have divided only the vestibular branch (two cases) and so far the results have been the same. Hearing is, of course, retained exactly as before the operation.

Spastic Torticollis

You have all seen these distressing patients with their necks strongly turned to one side. If it is forced back it quickly returns when the pressure is withdrawn. The muscles of the neck are tight as iron bars. A few years ago Dr. Finney cured 75% of these cases by removing the peripheral branches to these muscles. These were the first cures.

Our operation is perhaps simpler, easier, and more certain of results. Through a high cervical laminectomy the first, second and third motor branches on each side are divided. Then, without turning the patient, the spinal accessory nerves are divided on each side of the neck. By this operation the cures are about the same as by Dr. Finney's procedure, about 75%. The reason all can't be cured is that the muscles with the nerve supply down lower than the third cervical are, at times, involved, and one can't cut the fourth cervical nerves which contain the phrenics. But even those cases are greatly improved.

(Lantern slides were then shown).

Discussion

President Speer: Gentlemen, we have listened to this very instructive paper—is there any discussion?

Dr. A. J. Strikol (Wilmington): I rise in hesitation to discuss this paper, for the reason that it is presented in such a masterly way, but I do want to ask a question, or at least express an opinion.

Dr. Dandy, no doubt, has left an impression that it is a very simple and easy operation. I have heard the opposite by men like Grant and Frazier and others. Dr. Dandy discussed the same paper, I believe, about three years ago in Philadelphia, and I had the good fortune of listening to him. As I say, the other men say it is not as easy as Dr. Dandy tries to put it across. It might be very easy in his hands, but possibly only in his hands. As far as the diagnosis of various nerve lesions, also, Dr. Dandy said it is easy to differentiate. Well, if it is easy, we have missed many of them. I have two or three cases in mind. In fact, I showed two cases before the County Medical Society about two years ago, and those two cases were worked up very well. They were in the hands of Dr. Frazier's clinic, and Dr. Grant's. Another case was worked up by Dr. Patton, and they diagnosed a trifacial neuralgia. One of the cases was sent back to me with a statement that his frontal sinus was involved, and they asked me to open up the sinus and clean it out before they would proceed with this operation of dissecting the sensory nerve. So I did open that frontal sinus, and found a whole lot of pathology in the sinus, cleaned it out, made a large opening in the nasal frontal duct, and a few months after that I brought the very same patient in, as possibly a number of you remember. He made the statement that he visited dozens of doctors and spent hundreds of dollars, and he would have to walk the floor day and night, and took as high as 20 and 30 aspirin tablets per night without any relief, but the man was operated on, the frontal sinus cleaned out, and it has been over two years now, and as far as I know he is free of all the symptoms, and I hope I have the opportunity to present him at a later date.

There was another case—similarly, the frontal sinus was cleared out, and that person also is relieved. I have had a number of cases of the teeth, roots in the gums, irritating—as I say, I might have made a mistake in diagnosis, and I would like to have Dr. Dandy give us some more differential signs and symptoms, but I do know that two or three of those cases cleared up, having had typical trifacial neuralgia. I might be mistaken and mistaken badly, as I say, but I have had assistants, consultants, and they also said it was trifacial neuralgia, and I know that they are relieved of all the symptoms that they had previous to the operation, and they have been free of it for some time since the operatio

Dr. M. A. Tarumianz (Farnhurst): It certainly has been a great pleasure and honor to hear Dr. Dandy, the world-famous neurosurgeon, and have him appear again before the Medical Society and present these matters pertaining to neuralgia. I have had the pleasure and honor of hearing Dr. Dandy on many occasions. It is more pleasure to have Dr. Frazier and Dr. Dandy together sometimes. I think they are a splendid pair, and they certainly do discuss things wonderfully well.

It seems to me that what we are most concerned about is the diagnosis. Dr. Strikol presented clear cases. I think that is what Dr. Dandy wanted to impress upon us: that primarily we want to recognize that there are two different types of neuralgia, on the functional basis, and on the organic basis. I doubt very much that those cases Dr. Strikol treated were neuralgia on the basis of organic disease. I think they were functional, as Dr. Dandy so well described it to us. I think primarily it is the duty of every general practitioner to try and determine whether it is a functional or an organic case. If it is organic, naturally it should be referred to a well-qualified neurosurgeon. We have few neurosurgeons well-qualified. To attempt to operate by general surgeons on those cases I think is more or less a bad procedure.

I think what I am going to take out of this particularly is that Dr. Dandy has given us encouragement for those unfortunate individuals who have suffered from organic neuralgia for years and years, and every method that has been applied, especially extraction of the teeth and removal of the tonsils, and opening of the sinuses, and whatnot, has been futile.

I would like to ask Dr. Dandy one single question. Has he seen many cases after operations of operative psychosis? If so, I would like to know about it—postoperative psychosis.

Dr. E. R. Mayerberg (Wilmington): I had the pleasure of hearing Dr. Dandy two years ago. I was much impressed with his talk then, and more so today, because he showed pictures today that were not shown up there at that time, I believe. I don't think Dr. Dandy is trying to give the impression that this is easy to do. I think he realizes, as the rest of us do, that that particular region would not be approached by the ordinary operator. The average man who has any sense at all refers such cases to a man who does neurosurgery.

One thing that I am very glad to have heard today was Dr. Dandy's statement that the trifacial neuralgia was not due to sinus. I have cases referred to me as sinus cases and find nothing in the sinus. We do find cases with sinus involved, headaches, not typical trifacial neuralgia. The point I am trying to bring out is that unless a case has definite sinus involved, that case should not be subjected to any radical sinus operation. It is done, every day. The patients do not improve, and when they finally drift into the hands they should have gotten into first, they are so thoroughly disgusted with the medical profession in general that most of them drift to the osteopaths and chiropractors, etc. I think we should all study these cases. We certainly have heard enough today to give us enough to base the differential diagnosis on, and unless we can prove a definite sinus disease we shouldn't touch them, without at least having them studied by a man who does the work that Dr. Dandy does.

Doctor Dandy, I enjoyed your paper very much.

Dr. I. M. Flinn (Wilmington): I am interested in spastic torticollis more than in the other part of Dr. Dandy's paper. I wonder from what he said whether or not he considers spastic torticollis more organic than functional. It has been my impression that spastic torticollis was frequently a form of hysteria. And if it is hysteria, does that influence him any in the selection of the cases for the particular procedure he presented?

Dr. W. F. Bonner (Wilmington): I enjoyed Dr. Dandy's paper very much. I was particularly interested in the Ménière's disease. Several years ago he presented a paper on Toxic Labyrinthitis, in which there were three cases: one caused by teeth infection, one was maxillary sinusitis; and the other one was protein sensitivity. None of these cases had any marked tinnitus. They had very definite changes in the caloric tests, and demonstrated that the removal of the toxic source of infection had improved the case, but in none of these cases did they have any tinnitus at all.

I was quite interested in his remarks about alcoholic injections. I gave a number in several cases and I found in all cases it was only temporary, and a very marked shortening of the duration of elimination of pain after each injection.

There is another thing I have gotten stumped on several times—brain abscesses and brain tumors, with symptoms that resembled either trigeminal neuralgia or fifth nerve involved. I am glad he didn't speak about seventh nerve facial involvement, particularly as we have done a few mastoids. What I would like to know is why occasionally you get an involvement of the seventh nerve before an operation with the mastoid and it clears up afterwards, instead of coming on after we are through, which, thank God, occasionally occurs?

Dr. Lord: I would like to ask Dr. Dandy if in the absense of infected sinuses the tumors he speaks of are considered a causative factor of the neuralgias in question?

DR. W. E. DANDY: Answering Dr. Strikol: I see many cases diagnosed as trigeminal neuralgia that are not such. When I spoke very dogmatically about the diagnosis of trigeminal tic douloureux, I meant the paroxysmal pain. Never will a case of sinus infection give the paroxysmal pain of tic douloureux, nor will a liberation of pus from the sinus affect trigeminal tic douloureux one iota. One has to bear in mind, however, that there are periods of susceptibility to the attacks of tic douloureux. A patient may go for a year, or even more, without any attacks of tic douloureaux; or the diagnosis may not have been correct.

Now there are many pains in the face of trigeminal neuralgic type, or grouped with that, that are steady pains and not the tic pains; they will be helped by opening sinuses.

Answering Dr. Tarumianz: Postoperative psychosis occurs after any operations, but usually the lesser ones. They are due to inherent instability of the patient's central nervous system and not to the character of the operation.

Answering Dr. Flinn: I don't think torticollis is ever functional. If they were it would not be possible to cure them.

Answering Dr. Bonner: You were probably dealing with labyrinthitis and not Ménière's disease.

Answering Dr. Lord: The trigeminal neuralgia resulting from tumors is identical with that without tumors. It would be of no great advantage in differentiating trigeminal neuralgia due to tumors.

THE YOUNG PSYCHOPATH*

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The "psychopath" enjoys a colorful distinction. Performances in everyday life which bring him this attention comprise an array of public sensations, ranging from fervid evangelistic enterprises to fake kidnapings, questionable bank failures, and even attempts at assassinations.

Popularly, the psychopath is a person of spectacular personality who fails in his aggressive attacks upon acceptable social regulations. More concretely, the term is applied to abnormalities in personality, expressing themselves mainly in the character and intensity of emotional reactions.(1)

About one hundred years ago, Pritchard,(2) the French alienist, used the term "moral insanity" to describe a "marked perversion of the feelings, affections, and active powers without any illusion or erroneous conviction impressed upon the understanding, while the intellectual functions present no apparent abnormalities." The word "psychopath" has become gradually more constricted in its application as it evolved from a number of broader groups variously named, psychopathic inferiority (Koch), constitutional psychopath (Ziehen), constitutional inferiority (Meyer), constitutional psychopathic inferiority (Campbell), psychopathic personality (Diefendorf's Adaptation of Kraepelin), and moral imbecility (Tredgold). Formerly the term signified deficiencies in both intelligence and emotions. For many years the feeble-minded, epileptic, psychoneurotic, glandular disorders, and the psychopaths were included in one class. Meyer in 1906 separated from this class the psychoneuroses. Shortly afterward, another group was excluded, the mental defectives. The word "sociopath"(3) conveys more accurately the idea of anti-social activity as the descriptive quality, common to this group, mainly responsible for its significance.

For the purpose of this discussion the psychopath is an unstable person of strong instinctive drive in attacks upon the social order to which he is born, with defective control and emotional balance, exhibiting limited judgment and foresight, with little evidence of profit from previous experiences, in the presence of adequate formal intelligence, as a constant pattern of behavior habitual to the individual since an early age.

It is noted that definitions of psychopath are descriptive rather than interpretative, although certain qualifications are being added for the purpose of emphasizing motives and reactions to life situations in distinction from inherent constitutional pre-disposition. Kraepelin(4) calls attention to the psychogenic nature of this condition by declaring such types to be "distorted personalities whose evolution was interfered with."

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The importance of personality disorders in the social life of this day is illustrated by statistics on criminals. A survey of the county jails and penitentiaries of New York State found the psychopath to make up 42.2% of the population.(5) Bingham(6) found among three hundred cases 43% psychopathic states. Owens(7) in a recent radio broadcast listed as intellectually and emotionally normal of the State prison populations only 15%, as mentally defective 25%, and insane 5%, leaving about half of the population to be accounted for on the basis of abnormal personality. Among the delinquent children at the Juvenile Court, New Castle County, Delaware, more than 50% of the children referred for psychiatric examination were found to present serious personality deviations, apart from intelligence defects.(8) A report of the Classification Clinic at the Auburn Penitentiary covering the first year's work, based mainly on the studies of 486 persons, listed the neuropathic states as comprising 34% of the population.(9) Examinations of 1,040 new admissions at the Elmira Reformatory during the fiscal year 1931-1932 showed 30% to be psychopathic.(10) The increase in crime and delinquency is recognized. Attorney General Mitchell in an address before the American Bar Association last October reported that during the three and a half years of his incumbency the number of Federal prisoners had risen from 25,000 to 53,000 and that in the fiscal year just closed 90,000 criminal cases were begun in the Federal courts as compared with 83,000 the previous year. The part that the youthful offenders have played in criminal behavior is indicated in a recent survey in New York City, showing that "over a period of a year offenders under twenty years of age were accused of 44% of all the burglaries in the city and 46% of all larcenies, and that every fourth man in the police lineup was between sixteen and twenty years of age.(11) In a comparison of the ages of male prisoners sent to the New York State penal institutions, there were 861 boys committed during the last fiscal year as compared with 346 ten years ago. These figures have directed attention to the personality of children, particularly the young psychopath as a means of prevention and correction. To be sure, the increase in delinquency among juveniles is attributable to many factors of great variety. However, compared with any other single item as a contributing agent, the psychopathic personality is a major problem.

Illustrative cases of children examined at the Mental Hygiene Clinic, Delaware State Hospital, are reported as follows:

Case No. 1—R. L., age 8, referred to the Mental Hygiene Clinic for disobedience in the classroom. In the 3-A grade. Bright pupil but bothersome. Older of two boys, reared under both parent supervision in comfortable circumstances. Both parents employed. No positive determinants in heredity.

Full-term baby with normal birth and development. Evidence of temper in infancy. During the last three years the boy became difficult to discipline and "had no respect for authority whatever." Had many playmates and all kinds of toys and games. Was encouraged to take violin lessons and made big plans to play in the school orchestra. He suddenly quit for no apparent reason. During the next year his behavior became more intolerable. He truanted from school, pocketed money which he was supposed to use for household expenses, and forged receipts. Coaxed other children to play truant, burglarized a butcher store, and broke into a private home, securing a gun, purse, flashlight, and batteries. Over this period of time the boy was punished both by denial of privileges and also by severe lashings without effect.

Examination reveals an attractively featured, physically healthy boy of high-average intelligence (Stanford-Binet Test), presenting an air of self-assurance. He is ready with conversation, seems to enjoy interview, and is quick with explanations. Makes frank admission of his misdemeanors, appears even boastful. He is callous and selfish. When he was spoken to about expulsion from school on account of incorrigibility, he answers that he should worry because he is going to the United States Naval Academy next year anyway. The boy is on probation at the Juvenile Court and under treatment at the Mental Hygiene Clinic.

Case No. 2—S. R., age 5. Healthy boy, younger of two siblings under the supervision of his father. Mother died two years ago. A housekeeper is entrusted with the care of the boy during the day. Older sister, age 10, has just been accepted by the Industrial School for Girls as an incorrigible minor.

No nervous or mental determinants except that the father is reported to be high-strung and excitable. Birth and development normal. At an early age the child presented a very stubborn disposition. What he was told not to do seemed to invite his immediate attention. No kind of punishment dissuaded him. In a fit of temper following correction, he would regularly go up to the bedroom and urinate freely on the walls and furniture. He had been fearless in the face of threats. Even after severe whippings he would retaliate by urinating around the rooms. His behavior became so intolerable that he was referred to the Juvenile Court with an appeal for commitment to the Industrial School.

Examination reveals an attractively featured, clear-complexioned, bright-eyed boy, very likable in every detail. He is responsive and sociable. Exhibits spontaneity and initiative and seems to thoroughly enjoy attention. He says, "Yes" he is a bad boy, that everything he does is bad, and that he does not know how to be good. The idea of bad is thoroughly ingrained in his content of thought, although he cannot name a single overt act which has brought him a thrashing. With indifference he says that his sister is "Out where they put bad girls."

Stanford-Binet Test rating: Average Intelligence.

The boy has always been quite cheerful as long as he was permitted to do what he wanted. When denied anything, he put on a scene. As long as he can dominate he is well behaved. He is at all times observant, inquisitive, and energetic. He interpretates everything to be made for his particular use and tolerates no interference. He has had more than average discipline and guidance. Personal appeals and every kind of punishment have been without effect.

Case No. 3—C. W., age 13. An attractive, stern-featured, blonde boy, referred by the Wilmington Public Schools on account of defiant attitudes and poor scholarship. 8-A grade. Failing in all subjects. Has been in a foster-home of marginal circumstances under sensible, sympathetic supervision since six months of age, following separation of parents. Thin and delicate as a child. During his second year of infancy he had frequent screaming spells, growing worse until he was taken to the family physician. Spanking was prescribed by the doctor and the screaming immediately stopped. Always had a great many toys, which were broken up fast. Had a number of pets which never held his interest for long. Was given music lessons but soon dropped them. Recently he has been fidgety and restless about the house and quick-tempered. Has grown defiant and insolent toward his foster-parents and stays out late at night without telling where he is going. When told to do something he replies, habitually, "Oh Yeah." During the past year at school he has been "defiant and nasty, doing nothing he is told to do." One episode is characteristic: "He got up to sharpen his pencil and when he was told that he did not need a pencil his reply was defiantly, 'Oh, don't I?' and by the time he really had need for the pencil he had lost it." He deliberately comes in late from the playground.

During interview the boy is polite and attentive, talking freely about himself. He is restless and changes position frequently, exhibits just a little self-pity, and nurses an orphan complex. He has no explanations for his attitude at school. Makes many good resolutions and cries when he talks about his failures. With more than usual feeling of shame he admits masturbation.

Psychological examination revealed above-average intelligence on the Stanford-Binet Test. He rated with above-average mechanical ability with the Stenquist Test. On the Stanford Achievement Test he had an educational age of 14 years and 11 months, almost a year and a half in advance of his real age. In arithmetic, reading, history and literature his achievement was equivalent to about second year high school. In spite of this ability, demonstrated by actual formal tests, the boy was failing in the 8-A grade.

This boy grew up in a home of average opportunities and guidance under sensible discipline. Since an early age he exhibited temper spells, selfish, erratic behavior, insolence, defiance of regulations, failures in school, and defective judgment in the presence of adequate native intelligence and abilities. He has a colorful heritage. The father and paternal male relatives were excessively alcoholic. Father is, at present, psychotic. A paternal uncle had a criminal record and killed himself in jail. Two older brothers are well-known bootleggers. One sister, a prostitute, was recently killed accidentally. Another sister is committed to the Industrial School for Girls.

Here, defective constitutional endowment in the emotional and volitional field asserted itself in the boy's pattern of behavior in spite of every opportunity in the immediate environment for wholesome development.

Case No. 4—K. C. A round-faced, pretty five-year-old boy, referred by the Children's Bureau as a behavior problem. The youngest of seven children. Mother dead; father is serving a sentence in the Workhouse. Has been in the present foster-home since three years of age and has been a constant problem. He kicks other children, throws stones at them, curses, and fabricates freely with no special motive except "to make himself the hero." He steals and threatens to kill the baby, saying to his foster-parents, "Me could kill that baby with a hatchet." He masturbates openly.

Two years ago during interview the boy was bashful, stubborn, and fearful with strong emotional reactions. Psychological examination (Stanford-Binet Test) rated him in the dull-normal level of intelligence. His intelligence quotient was found stable on two subsequent tests at yearly intervals.

On the boy's second visit at the Mental Hygiene Clinic he had changed considerably, was voluble in conversation, rambling from one subject to another and engaged himself with everything he could lay his hands on. His talk ran about as follows: "My mother has a basket like that—She puts dishes in it —It is hot today." When asked how old he was, he said, "I have got a lot of brothers, they know how old I am—My first mother is buried—My father is in the jailhouse." Spontaneously he adds, "When people have money, they ain't supposed to steal things, are they?" When asked if he was ever bad, he chuckles and says, "Sure—all little boys steal—didn't you steal? One time I piled all the wood up on the porch—Didn't you ever get whipped on your behind?—Didn't you break up all your toys when you were little —Did you tell the truth?—Are you a doctor?" This monologue continued without promptings. When questioned about his masturbation practice he said, "Sh! sh! Don't talk so loud—They will hear you out there—Shut up I told you—Don't talk so loud—See that crack under the door—They will hear you." After admitting masturbation he adds, "Don't you tell anybody that." During this interview the boy was described as over-confident, hyperactive, ego-centric, and boastful with definite psychopathic personality trends. This year he was formally referred to the Clinic from another source, the Department of Public Instruction, on account of misbehavior and retardation. He is repeating the 1-B grade for the third time; described as quarrelsome, excitable, and talkative in the classroom.

In this case a healthy, fairly intelligent child, reared under favorable influences displays temper spells, resistance to discipline, irritability, and cruelty to other children, and is failing with school assignments.

Case No. 5—B. S., a nine-year-old boy, referred by the Children's Bureau on account of misbehavior. Oldest of three children, reared in an atmosphere of incompatibility between parents under economic stress. He was deserted two years ago. Was said to have been a very stubborn infant. Prior to desertion by parents complaints had been made to the Children's Bureau about the severe beatings which the mother administered. The boy habitually stole money and persisted in hooking rides on the trolley cars. At one time, in a fit of temper he swallowed a bichloride of mercury tablet and almost died. He picked quarrels with other children and one time pushed his little sister in front of an automobile. He used to run his express wagon at top speed into people walking on the streets. He has been in several foster-homes, and has continued stealing, lying, fighting and cursing. He was always a disciplinary problem in the school. This year he is failing in the sixth grade. His Sunday School teacher could not keep him in her class, saying that he drove her to distraction in a half hour.

On first interview two years ago the boy was friendly, co-operative, and polite. He was attractive in appearance and very likeable. He had no fear of anything. He explained that he fought with other boys because he was paid by an older boy to do so. Stanford-Binet Test rated him with above-normal intelligence. A repeat Stanford-Binet Test one year later showed his I. Q. to be stable. He was found to be moderately under-nourished and had a visual defect, both of which defects have since been corrected.

The boy was continued under treatment at the Clinic at regular intervals. During each interview his manner was exemplary as contrasted with his behavior in the school. He has always been full of good resolutions, but not until recently had he ever executed any of them. He is ashamed over his failure this year, but blames his teacher, saying, "She is mad at me. Why should I fail, I only got one E?" His present foster-parents have made excellent contact with the boy and report him to be considerate, generous, and well-liked in the neighborhood. They admit that he is boastful and argumentative. Always wants to be bigger than other children. Recently he has refrained from lying and stealing.

In this case a boy of unstable parentage, reared under trying circumstances was a serious disciplinary problem, stealing, lying and tormenting other children, but always penitent and full of good resolutions. He is failing in school work in spite of more than average native intelligence. He has improved considerably in social adjustment under treatment.

Case No. 6—A. A. R., age 21. Referred by the Criminal Court for determination of mentality. Examined at the Kent County Jail, where he was confined pending trial for the theft of an automobile. Arrested three days after release from the Workhouse, where he had just completed a sentence for the same offense. During the past four years he has served three sentences for larceny.

The boy is an only child. At three years of age there is a history of injury to the head with lacerations of the scalp. At eight he was hit by an automobile and cut around the mouth and head. There were no skull fractures. Regularly promoted in school, but was dismissed from a military academy in Pennsylvania with a bad conduct record. He left high school in the second year. He was considered incorrigible since an early age.

In infancy the child was left for a good part of the time with the landlady because his mother rarely stayed at home. His father was serving overseas in the World War. On his father's return the mother deserted altogether and was divorced. The father then married the housekeeper who had taken care of the boy in his absence. After leaving school the boy never held one job very long. However, he had the reputation of always dressing well and was known to be a free spender. He began having drinking parties and became sexually promiscuous without restraint. At one time he left the home of his father and took up residence with his mother. The boy is believed to have helped his mother in the bootlegging business and is reported to have actually solicited for her in prostitution. He had always resented correction and became angered when disciplined by his father. His own mother said that the boy was irresponsible and undependable all his life.

During interview the young man pretended indifference. He moved nervously and made many deep inhalations as he spoke. He was evasive about all of his misdemeanors. He stated that he had as many opportunities as any boy except in respect to his stepmother's treatment. He said that he became embittered when his stepmother threw him out of the house for the sixth time. For an explanation of his conduct he says that all his trouble came from never having a home. He has a good reason for every failure. His attempt to steal an automobile as soon as he left the Workhouse did not seem to him to be at all out of the ordinary. He said that some old friends were waiting for him when he left the Workhouse to celebrate his release. He had no money and no place to go so he took up with the old crowd again.

Stanford-Binet Test four years ago rated the boy in the dull-normal level of intelligence. The Stanford-Binet Test this year rated him with average intelligence. Manual ability on the Arthur Performance Scale, Form 2, was inferior to his verbal intelligence.

In summary, an only boy is reared in a home of marginal circumstances. His stepmother had the care of him practically from the time he was born. The history of two head injuries is not regarded significant. He was regularly promoted in school, but dismissed for incorrigibility. He held no steady jobs. He was impulsive and erratic as constant traits. He displayed no appreciation of morals and exercised no sexual restraint. He habitually excused himself by blaming others. He had average native intelligence. The boy's behavior is characterized by inability to "advance consideration for the future" and to profit by previous experiences, by lack of fixity of purpose and by a talent for rationalization, denying to himself all responsibility for his criminal conduct.

Psychopathic personality, as considered in this article, excludes the pre-psychotic states and trends common to schizophrenic and manic depressive temperaments, the neuropathic or neurotic character, temperamental deficiency in the sense of Burt's inborn emotional instability,(12) defective delinquency, simple adolescent instability, gross physical inferiorities, and organic brain disease. As pointed out by Salmon(13) there may frequently arise in this disorder definite psychotic episodes, "—psychopaths have a tendency to react toward different situations in a neurotic or psychotic way, or have defects in volition which make adaptations that are simple for others very difficult for them." Types of behavior are exhibited by the psychopath closely resembling for a short time actual psychoses. In a spirit of exaltation, aggressiveness, increased motor activity, and temper outbursts, a manic depressive psychosis, manic type, may be suspected. On the other hand, following frustration, with characteristic feelings of inadequacy, self-pity, and tearfulness a picture of manic depressive psychosis, depressed type is suggested. Then again, after a series of denials and defeats, there may develop in conjunction with a hypersensitiveness characteristic of this type, a reaction of intense prejudices, and attempts at retaliation, with a clinical picture of paranoid condition. Not infrequently a definite psychosis develops requiring commitment to an institution. A survey of the State Hospitals in this country reveals the incidence of psychoses with psychopathic personality as 1.2%.(14)

Over a four-year period from August 1, 1929, to June 30, 1933, of the total number of admissions to the Delaware State Hospital, numbering 853 cases, 7.5% were classified as psychopathic personality, males constituting 65%, and females 35%. The psychopathic personalities are further subdivided into those with psychoses and those without psychoses, of which there were 3.6% and 3.9% respectively.

In the Mental Hygiene Clinic over the same period of time of the 5,226 children examined, 75 or 1.4% were classified psychopathic personalities. It is the policy of the clinic in its classification scheme to withhold a definite diagnosis of psychopathic personality until the child has been under observation and treatment for at least a year, so that the relative importance of contributing factors can be judged and those influences and conditions reasonably beyond the child's ability to adapt to, eliminated and corrected. There have been over three hundred cases originally manifesting psychopathic personality trends which have been eliminated from this group by reason of findings in the physical, social, and educational background largely responsible for this type of reaction.

For the want of a better category certain kinds of social behavior, typified by hoboes, habitual drunkards, prostitutes, and perverts have been included in the class of psychopathic personality. However, there is little similarity to the psychopath, with his aggressive, anti-social tendencies. On the contrary these individuals are asocial except among members of their own tastes. Certainly from the standpoint of interpretative formulation along psychobiological lines these characters are distinct from the psychopath. The distinction is seen much more clearly in the views of Gueraud or of Kretschmer. Gueraud (15) uses the term "Heboidophrenia" to describe the solitary wanderer who has a sameness of feeling day after day, avoids the company of others, is slow in movement, and resistant to approach almost to the point of stereotypy and negativism. Kretschmer(16) discusses indifference as a variant of affective sensibility as related to the great army of people who sink down the social scale. There are some restless wanderers in whom indifference is combined with attacks of schizoid depression, nearly related to the schizoid class. They are half interested, half emotionally pained and hungry for emotional stimulation——.(17)

In an attempt to understand the psychopathic personality by dynamic interpretation there is a tendency to minimize constitution or inheritance as the conditio sine qua non. White(18) declared against too great emphasis upon constitutional basis. He says, "Here might be early fixation and the term constitution is unfortunate because it indicates that the case is congenital or inherited and therefore hopeless." Silk(19) mentions "inherent or acquired abnormalities that express themselves at the psycho social level—social psychopaths—acquired—alert, aggressive, egotistic, and narcistic." Johnson(20) states "the psychopath is made not born—The etiology of their trouble is psychogenic rather than constitutional." According to Partridge(21) "Certainly the tendency now is not to regard these maladjustments not as something unique and congenital, but as related to other conditions, varied in form and degree of adaptation and in security of adjustment." Along these lines of reasoning speculation would arise as to whether the kind of constitutional background in the psychopathic personality might not, under ideal environmental conditions, with healthful contacts and opportunities for emotional outlet, lead not only to personal achievement above the average, but also to benefit to the whole social scheme, possibly exemplified in such characters as Benvenuto Cellini, an Italian artist of the sixteenth century, Aimee Semple McPherson of Angelus Temple, Stalin, the Russian demagogue, and the Louisiana Kingfish, Huey Long.

The young psychopath remains an unsolved problem. His general behavior and special reactions have evoked a wealth of descriptive essays as varied as the profane epithets directed at him on the streets. Determination of motives is almost uniformly dismissed with the view that the whole setup is constitutional or inherited, not yielding to correction or discipline, something to be suppressed and isolated.

Another drawback is that the psychopath does not reveal his true self when the spotlight is thrown on him. If knowledge is to be had about the evolution of this reaction type the person must be studied in his native haunts, unaware of criticism and identification. During interviews in formal settings with the psychiatrist, his performance is purely for stage effect. Fabrications and rationalizations stand in the way of accurate analysis. The psychopath looks upon confessions as a weakness. He often holds the alienist in scorn, at the same time professing interest and displaying an air of confidence and co-operation.

Information from relatives and neighbors is so colored by prejudices that evaluation of various contributing factors is difficult. Many informants in this way aggrieve themselves of the wrongs and humiliations which they suffered from the patient's exploits.

Lastly, the psychiatrist, at a loss over the resistance which he meets and uncertain of his deductions, is tempted to project his own experiences and complexes into his interpretation, so that, in the end, the account becomes more truly a description of the psychiatrist than of the psychopath. In spite of these obstacles, however, observation of the psychopath in the course of many contacts from early childhood can be expected to throw considerable light on the attitudes, traits, and motives behind the picture.

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Discussion

Dr. M. A. Tarumianz (Farnhurst): I should like to say a few words. I congratulate Dr. Uhler upon his very fine paper. I think Dr. Uhler has presented facts here to be considered by the members of the Society very seriously. Forty-five per cent of convicts or inmates of prisons belong to that particular class of psychopaths. You can imagine how important it is to diagnose those cases in incipiency. Personally, I feel that psychopaths are not born as such. Psychopathic personality is more or less acquired, and, therefore it can be treated if the cases are presented through proper channels. Naturally, after they have been psychopaths for ten, fifteen or twenty years, it is almost impossible to change their attitude toward the social functions of members of the community. I again congratulate Dr. Uhler upon his very fine work.

CANCER COMMENT

First Year's Progress of Delaware Tumor Clinics

Marion L. H. Freeman*

July 6 is the first anniversary of the first organized tumor clinic ever held in the State of Delaware. This clinic under the local direction of Dr. O. V. James, at the Milford Emergency Hospital, marks an important milestone in the extensive program of cancer control now under way in Delaware. Similar clinics in other hospitals soon followed, until at this date there are five organized clinics, located in four cities, giving the physicians and citizens of Delaware opportunity for advice and suggestions of proper treatment, as well as assistance in obtaining free treatment when this is necessary. These clinics also offer, for the asssitance of physicians, a system for following patients who should be examined periodically.

The organization of the cancer control program follows the suggestions of the American Society for the Control of Cancer and is similar to programs carried on successfully in some other States. The clinics are all under the general direction of Dr. Douglas M. Gay and Marion L. H. Freeman as secretary, who attend all sessions. The responsibility for the conduct of each clinic and the appointment of its staff has been placed in the hands of local directors appointed by the Delaware Committee. The degree of success of each clinic is measured by the efforts of its staff.

A total of 103 patients have attended the tumor clinics during the past year. Many have returned for repeated examinations, making a total of 127 patient visits as follows:

Milford Emergency Hospital—Dr. Oliver V. James in charge—Tumor clinic at 11 a. m. on the first Thursday of each month—12 sessions to date—11 patients seen—15 visits.

Kent General Hospital—Dr. Henry V. P. Wilson in charge—Tumor clinic at 2 p. m. on the first Thursday of each month—12 sessions to date—15 patients seen—18 visits.

Beebe Hospital—Dr. James Beebe in charge—Tumor clinic at 2 p. m. on the third Thursday of each month—11 sessions to date—15 patients seen—29 visits.

Delaware Hospital—Dr. William H. Speer in charge—Tumor clinic at 4 p. m. on the second and fourth Fridays of each month—23 sessions to date—34 patients seen—45 visits.

Wilmington General Hospital—Dr. W. Edwin Bird in charge—Tumor clinic at 4 p. m. on the second and fourth Thursdays of each month—16 sessions to date—8 patients seen—21 visits.

Many additional patients are followed by their physicians, whose findings are reported to Mrs. Freeman for recording.

Records, on standard forms arranged by the American College of Surgeons, have been made of 437 cancer patients. Incomplete records of 224 additional patients will be completed as the patients are presented at the clinics. Our data on bladder tumors, obtained largely from a special clinic at the Homeopathic Hospital, have recently formed the basis for several reports.

We shall soon be able to compare our results of cancer control with those of other tumor clinics of the world.

---

*Secretary-technician of the Delaware Tumor Clinics.

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Dear Dr. Speer:

It is terribly hard to find any way to tell you just what the telegram and flowers from our Delaware men meant to me. It is the first time that a State Medical Society has so honored one of their women and so is doubly appreciated.

If in the next year I can do anything to merit your approbation, then when we all go to Atlantic City next June, I shall love to welcome you to "my convention."

The flowers were lovelier than I can tell you, but the thought behind them is even dearer to me. Will you express my deep appreciation to everyone, collectively and individually and at the first opportunity I shall hope to do this myself.

The Cleveland Convention was fine and I am sure next year Delaware can have a big representation in Atlantic City.

Sincerely,
Mildred Hutton Tomlinson.

Vitamin C Produced Commercially

Man continues to gain in his search for knowledge, and in quick utilization of that knowledge once it has been acquired. Only a few months ago scientific publications carried the news of the synthesis of Vitamin C (ascorbic acid) by Reichstein and Gruessner. Now announcement has emanated from the laboratories of Hoffmann-La Roche that the process for this, the first chemical synthesis of any vitamin, has been so elaborated and improved upon that actual production of Vitamin C on a commercial scale has been achieved.

Until very recently Vitamin C had been an unidentified substance known to be present in fresh fruits and vegetables and in animal tissues. About all that was known of it was that its absence from the food of man or warm-blooded animals would bring about scurvy and other characteristic vitamin deficiency symptoms. Scientists have been giving a great amount of study to the subject of vitamins and as the *Journal of the American Medical Association* had occasion to observe editorially in its issue of June 2nd, 1934:

> "Recently two incidents have added to the knowledge of Vitamin C. Foremost is the discovery of the chemical nature of this organic food accessory. It is clearly recognized as one of the hexuronic acids, designated as ascorbic acid—a compound that can be prepared synthetically in the laboratory. The other contribution is the development of an indirect chemical method for the estimation of ascorbic acid in foods and tissues. This promises to enable investigators to dispense with the time-consuming biologic method of assay that has been in vogue for more than a decade."

Once the chemical nature of Vitamin C had been determined the search for a means of producing the vitamin by chemical synthesis began and impetus was no doubt given this work by the fact that the cost of obtaining Vitamin C from natural sources was very high.

EDITORIAL

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Vol. VI July, 1934 No. 7

THE CLEVELAND MEETING

A large and enthusiastic meeting of the American Medical Association convened at Cleveland for the week beginning Monday, June 11, 1934.

The section meetings were of great excellence, and well attended. The scientific exhibits presented the latest advances in dealing with disease, public health problems, and social features of medicine. These exceeded the variety and scope of previous years, and one might spend the entire week to advantage in study of the instruction provided in this department.

As a form of medical education, if the graduating classes of medical schools could have been brought to Cleveland this year and conducted through the spacious hall in which this scientific display was presented, the average student would probably supplement his four years of study with more exact and useful information than he has acquired hitherto.

In several instances motion pictures set forth the facts in an impressive manner.

The *Cleveland Plain Dealer* in reporting the session of the House of Delegates referred to health insurance and veterans' hospitalization as "hot pokers" introduced into the deliberations of this legislative body of the Association. The reaction to the hospitalization of veterans was a repetition of previous expressions. The references to health insurance were in response to a resolution by the Michigan State Medical Society asking for the appointment of a committee to consider the A. M. A. policy toward mutual health service, and also the report of the Medical Service Board of the American College of Surgeons to the Board of Regents in which are set forth the recommendations of this Board as shown in a copy furnished by Dr. Franklin H. Martin.

This report was accepted and approved by the Board of Regents of the American College of Surgeons, and shows that this body, as represented by its Regents, believes in health insurance for the low income group, with the elimination of certain objectionable features of the customs abroad. This document also suggests minimum standards for industrial medicine and traumatic surgery.

It is of interest to note that Dr. Robert B. Greenough is chairman of the Medical Service Board of the American College of Surgeons. When the attention of the House of Delegates was called to the Michigan request and the action of the College of Surgeons, Dr. Charles I. Whalen of Chicago voiced his disapproval of the attitude of these organizations, and a recess committee was appointed to consider the request of the Michigan State Society. This probably means that no action will be taken on this report until the House of Delegates meets again, and is an indication of a desire to postpone action although this subject has been under discussion for more than a year.

When this appeal of the Michigan Society came before the House of Delegates, the House went into executive session, but the newspaper reports of the proceedings indicated disapproval of any action by organizations of constituent members of the American Medical Association.*

In defending its position the House of Delegates adopted a ten-point declaration of policy contained in a report of a committee headed by Dr. Nathan B. Van Etten of New York which is as follows:**

> 1—All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.
>
> 2—No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.
>
> 3—Patients must have absolute freedom to choose a legally qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give services.
>
> 4—The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.
>
> 5—All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.
>
> 6—However the cost of medical service may be distributed, the immediate cost should be borne by the patient able to pay at the time the service is rendered.
>
> 7—Medical service must have no connection with any cash benefits.
>
> 8—Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.
>
> 9—Systems for the relief of low income classes should be limited strictly to those below the "comfort level" standard of incomes.
>
> 10—There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession.

Much of this is quite like the plan adopted by the Michigan State Society, and also in conformity with several features of the report accepted by the Board of Regents of the American College of Surgeons, and it seems unusual for an organization like the American Medical Association to be disturbed because other organizations whose members are also members of the larger organization are studying existing conditions and codifying conclusions.

The feeling expressed by the President of the New Jersey Society at the last annual meeting of that society to the effect that the American Medical Association has been disinclined to formulate policies, has been endorsed in some quarters, and justifies independent study and action even by members of the A. M. A. Although the great power and creditable accomplishments of the A. M. A. are recognized, the attitude of criticism of honest attempts to clarify some of the great problems before the country has not been conducive to harmony.

The general spirit of the Cleveland meeting as shown in the devotion to the service of humanity was a reflection of the ambition of the profession to advance medicine to still further knowledge of the problems before it. This convention was one of the best in the history of organized medicine.

The President-elect is James Somerville McLester, who was born in 1877 and graduated from the University of Virginia, Department of Medicine in 1899. He is professor of Medicine in the University of Alabama School of Medicine, with an office at 930 South 20th Street, Birmingham, Alabama.

Massachusetts was recognized in the election of Dr. Roger I. Lee to the position of Trustee. Dr. Emmett C. North of Missouri was elected a member of the Judicial Council.

The next annual meeting will be at Atlantic City.

—N. E. J. of M., June 21, 1934.

The Cleveland meeting showed a total registration of 6293, the fourth largest in the history of the A. M. A. From Delaware went six, including Dr. James Beebe, whose radiant smile can be seen on the last row of the photograph of the House of Delegates, printed in the *J. A. M. A.* of July 7, 1934.

According to the *Journal of the Indiana State Medical Association*, Delaware is one of

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*Ed. Note: The House unanimously resolved that only the A. M. A. is entitled to voice the opinion of organized medicine on these topics, a doctrine that Delaware supports.

**Ed. Note: These principles were originally enunciated by the Bureau of Medical Economies of the A. M. A.

21 States which have had no recognition in the matter of officers or committees of the A. M. A. for the past ten years. These 21 States contain one-eighth of the membership of the A. M. A. We are represented, of course, in the House of Delegates, and it may be that no Delaware doctor looms large enough in medical organization work to merit national recognition, yet we are constrained to say that it is a lopsided organization that leaves 43 per cent of the States thus unrecognized. But—what can we do about it?

At the May meeting of the New Castle County Medical Society a resolution was adopted cancelling the arrangements made with the Physicians' and Surgeons' Exchange of Philadelphia, which had been collecting on delinquent accounts for our members, the main reason being that the results did not justify continuing with an out-of-town service. It is expected that when the Society resumes activities in the fall it will make suitable arrangements for the local operation of a physicians' credit bureau.

The annual outing of the New Castle County Medical Society was held at Farnhurst on June 20th, and a large attendance rewarded the efforts of the committee. Sports, games, and other amusements were topped off with an excellent dinner. Nearly 100 attended, including the officers of the Kent and Sussex County Societies.

A pleasant place to spend idle hours, profitably, is the library of the Delaware Academy of Medicine. An afternoon or evening is not wasted if one learns something he never knew before. All physicians and dentists are welcome.

MISCELLANEOUS

The Family Doctor and the Changing Order: President's Address

Walter L. Bierring, Des Moines, Ia. (*Journal A. M. A.*, June 16, 1934), in his presidential address, states that a new sort of clientele is emerging for the doctor of the future that will call for all the social and intellectual adaptability at his command. In this new order of society there is a call for a different type of family doctor or general practitioner than was required a generation ago. Although of somewhat different mold, he will be the central figure in the field of medical practice as in the ages past. He is the basic doctor of tomorrow and of the new order. It is for him that medical faculties will be enlarged, courses of study extended and physical equipment utilized to the highest degree. He will approach the threshold of medicine with a broad cultural training in the natural sciences and the humanities, so that he can read aright the faults of heredity and the laws of eugenics, to interpret more readily the problems underlying the biologic delinquencies which constitute the greatest burden of modern society. The number of specialists may be somewhat more limited in the future, but they will be distinctly of a higher order. The specialist in any particular field from now on must furnish qualifications that have passed the scrutiny of his peers. The family doctor and the highly qualified specialist will be the medical pioneers of tomorrow and ar destined to preserve the highest traditions of our guild. With the pendulum swinging toward a balanced population, it will be clearly evident that the time is coming, and not far distant, when the principal function of medical service can be effectively furnished by half the number of medical graduates that we now have. The wise selection of fewer students can well be left to the educational faculties. It is now well recognized that the yardstick of basic qualifications is not confined to academic grades for it is more important and fundamental that the prospective medical student have those attributes of personality characterized by an alert imaginative mind, physical and moral vitality, honesty, loyalty, resourcefulness and adaptability. He must be the kind of person who can deal effectively with sick lives as well as damaged organs or impaired physiology.

Dr. W. P. Orr, Jr., Given Banquet

Dr. William P. Orr, Jr., of Lewes, was tendered a banquet at the Rehoboth Country Club on June 21st, by the members of his profession.

Dr. Orr has been practicing medicine in

Lewes for the past 50 years starting practice here in the year 1884.

He was born in Lewes on March 14, 1857, and received his early education in the public school and a private school in Lewes; he entered the Pennsylvania Military College at Chester, Pa., and later was appointed to West Point where he graduated. He received his degree of Doctor of Medicine from the University of Pennsylvania in 1884.

Dr. Orr has been president of the State Board of Health for the past 25 years, and has been the U. S. P. H. S. officer at Lewes for over 40 years. He is also president of the Sussex Trust Company.

Dr. Orr spoke of the advances made in the past fifty years in the treatment of yellow fever, cholera, smallpox, and plagues. His Sussex confreres presented him with a handsome silver loving cup, suitably engraved.

The dinner was sponsored by the Sussex County Medical Society, and the arrangements were in charge of Dr. E. L. Stambaugh, of Lewes, secretary of the Society.

Re: The Congenitally Malformed

The Gynecean Hospital Institute of Gynecologic Research of the University of Pennsylvania is conducting an intensive study of families into which congenitally malformed individuals have been born.

Special interest centers in families in which malformations have appeared in two or more children. Physicians who have knowledge of any such families are urged to communicate with:

Dr. Douglas P. Murphy,
Gynecean Hospital Institute,
University of Pennsylvania,
Philadelphia, Pa.

Quintuplets

Despite the bursts of public enthusiasm and inspirational journalism which have attended the most extraordinary instance so far recorded of what might euphemistically be termed synchronous multiparity, the birth of quintuplets is nevertheless of distinct medical interest. In all medical history something over thirty cases of quintuplets have been recorded; no properly authenticated case of sextuplets. Prior to the notable achievement of Olivia Dionne, no unquestionable set of quintuplets has survived as such for more than fifty minutes. At the time of writing the Canadian quintuplets, weighing a total of thirteen pounds at birth, have traveled in each other's company, their ranks unbroken, through this vale of tears for fifteen days. Perhaps they are aware of their goal and are striving for its attainment—exhibitionism on a family pedestal in the World's Fair at Chicago.

According to Professor Alan F. Guttmacher of Johns Hopkins University, multiple births are most likely to occur between the ages of thirty-five and forty. The mother of our present quintuplets is an exception to the rule, boasting only twenty-four summers; seven less than her husband. The rarity of birth multiplicity increases, obviously, with the number of babes at the birth. W. W. Greulich, of the University of Colorado, studied 100,000,000 births, establishing one in 87 as the chance for twin births. The square of 87, or 7,569 gives the chances in favor of triplets; its cube, or 658,503 the chances in favor of quadruplets. If this rule continues to hold true in the higher registers, quintuplets should make their appearance once in every 57,289,761 births!

The chances of all five surviving the period of infant mortality, at this rate, would require an array of digits so far known only to astronomy.

—N. E. J. of M., June 21, 1934.

Blood Test Tells If Driver Is Drunk

Folks who indulge in consuming spirits will have to learn a thing or two about scientific formulas if they wish to keep up with the latest blood-test idea in determining how drunk they are. This new method, put forth by C. W. Muehlberger, coroner's chemist in Cook County, Ill., makes the old trick of walking the chalk line obsolete, according to the San Francisco Chronicle.

Mr. Muehlberger says that it can be learned to the fraction of a milligram—about the weight of a drop of water—just how drunk any person is at a given time, reports the writer.

If a cubic centimeter of the subject's blood contains less than one milligram of alcohol the subject is cold sober. But if the test shows one to two milligrams he is delighted and devilish. The rest of the interpretation goes: Two to three milligrams, relinquent and disgusting; three to four, dizzy and delirious; four to five, dazed and disgusted; over five, dead drunk.

Merck's Manual

Merck & Co. announces the publication of the sixth edition of the Merck Manual of Therapeutics and Materia Medica. Completely revised and expanded to include the latest developments in the progress of medicine, the new manual provides the physician with a convenient and dependable reference to modern essentials of diagnosis and therapy.

From an original two hundred and fifty pages in 1899, the Merck Manual has grown to one thousand, three hundred and seventy-nine pages in the present edition. The new edition, the sixth since the founding of the publication, has been entirely rewritten, yet maintains the characteristics of preceding editions, which have made it the standard reference manual for the majority of physicians, students, pharmacists and nurses.

The sixth edition is printed on fine paper and bound in dark blue fabrikoid covers with gold stamping. It is available only to members of the medical profession, pharmacists, chemists and those in allied professions, at the nominal price of two dollars per copy, representing the actual cost of printing and distribution.

Human Thallotoxicasis

James C. Munch, Glen Olden, Pa. (*Journal A. M. A.*, June 9, 1934), made an extensive search of the literature prior to January 1934 to learn the extent of human poisoning from thallium compounds and the number of deaths resulting therefrom. He found that following industrial exposure twelve persons have been poisoned, but none died. Following clinical use, 692 persons have been affected and thirty-one deaths resulted. Toxicologic literature records fifty-three human beings poisoned by thallium compounds, with ten deaths. Following the rodenticidal and entomologic use, twenty-one human beings have been poisoned and five died. Reports have been found on 778 human beings poisoned with thallium compounds; forty-six (6 per cent) died of thallotoxicosis.

BOOK REVIEWS

Surgery of a General Practice. By Arthur E. Hertzler, M. D., Professor of Surgery, University of Kansas, and Victor E. Chesky, M. D., Chief Resident Surgeon, Halstead Hospital. Pp. 602, with 142 illustrations. Cloth. Price, $10.00. St. Louis: C. V. Mosby Company, 1934.

Hertzler's newest book is, in reality, the surgery of an exceptional practice, and is the sequel to his "Minor Surgery." It aims to teach the general practitioner to care for many conditions, at home or office, that are usually referred to a consultant and a hospital. The main portion of the book is arranged regionally: there is also a section on wounds, hemorrhage, and infections ("anaerobic," page 57, should be "an aerobic") and the book concludes with a section on surgical therapeutics. The work is replete with practical suggestions; the technique advised is simple and effective; the style is not too terse, and is interspersed with occasional witticisms. The illustrations continue the Mosby standards of excellence. This is an unusually practical book, worthy of a place on every practitioner's desk.

Spinal Anesthesia. By George R. Vehrs, M. D., Pp. 269, with 81 illustrations. Cloth. Price, $5.50. St. Louis: C. V. Mosby Company, 1934.

This volume is a critical survey of the experimental and clinical work on spinal anesthesia during the past half century, and includes much impressive research by the author. The style is unequivocal, the conclusions logical. The illustrations, especially the drawings depicting the mechanics of the subject, are unusually helpful. There is an exceptionally fine bibliography. The book can be heartily recommended to surgeons and anesthetists.

Tuberculosis in the Child and Adult. By Francis M. Pottenger, M. D., Clinical Professor of Medicine, University of Southern California. Pp. 611, with 85 illustrations. Cloth. Price, $8.50. St. Louis: C. V. Mosby Company, 1934.

Dr. Pottenger's latest volume is a valuable contribution to modern medical literature. In a comprehensive manner, he covers a wide field with clarity and vision; and offers not only the specialist, but the general practitioner as well, the latest and best in diagnosis and treatment.

Commendable are the chapters on Diagnosis, Immunization, Visceral Neurology, Formation and After-Course of the Primary Lesion, Compression Therapy: Induced Pneumothorax, Phrenic Interruption, Thoracoplasty and Pneumolysis.

We congratulate the author on his exceptionally fine work.

Industrial Toxicology. By Alice Hamilton, M. D. Pp. 352. Cloth. Price, $3.00. New York: Harper and Brothers, 1934.

A concise review covering a great number of chemicals and chemical compounds met with in modern industry, Dr. Hamilton's book fills a long-needed demand for a small, handy volume dealing with the toxicology and symptomatology incident to industrial exposure. The bibliography is very extensive and will prove to be a handy reference for those who wish to go into the subject more extensively than space in the book permits. Dr. Hamilton does not cover treatment of the included subjects, which, of course, would decidedly enhance the usefulness of the volume. This book is a decidedly convenient reference for every physician doing industrial medical work, and should be of great interest to general practitioners, especially those located in industrial districts.

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A SEPTAD OF MORTALITY

Arthur C. Jost, M. D.
Dover, Del.

We praise with brief thanksgiving
Whatever Gods there be
That no man lives forever,
That dead men rise up never,
That e'en the weariest river
Winds somehow safe to sea.

That is the poet's reminder to the statistician that a definite end has been set to the reduction in mortality which all health departments have placed as their goals. Thus far can one go and no farther. The most positive and determined "we will pass" avails naught in the face of an inexorable and unalterable condition. Eventually the birth and the death rates must represent equality, and that which is given life must lose it.

There are literally thousands of causes of death, thousands of trapdoors to oblivion studding the pathway of the bridge in Mirza's vision. It may be therefore somewhat of a surprise to know that the relative importance of these exits not only varies vastly as between themselves, but have an altering and an alterable importance in years closely spaced in time. Our own records give ample opportunity for illustration.

If a selection is made of the causes of death which, in the state over a period of years, have appeared most frequently on the death certificates, it will be found that organic heart disease, Bright's disease, apoplexy, cancer, pneumonia, tuberculosis, and deaths from external causes form a septad which for each successive year over a period of years stands in undoubted prominence. The number of deaths which have occurred annually in the state since the year 1920 approximates three thousand. No fewer than from sixty to seventy per cent of all these are to be found in that group of seven diseases which head the mortality lists. The proportion, moreover, appears to be increasing, as will be seen in the following table.

1921 DISEASES	Population 225,000 DEATHS	RATE
Organic Heart Disease	358	159
Tuberculosis	308	137
Apoplexy	288	128
Bright's Disease	286	127
Pneumonia	236	105
External Causes	196	87
Cancer	176	78
	1848	
All Deaths 2973	Per Cent	62

1922 DISEASES	Population 226,000 DEATHS	RATE
Organic Heart Disease	339	150
Pneumonia	285	126
Bright's Disease	277	122
Apoplexy	272	120
Tuberculosis	267	118
Cancer	211	94
External Causes	184	81
	1835	
All Deaths 2987	Per Cent	61

1923 DISEASES	Population 227,600 DEATHS	RATE
Organic Heart Disease	382	168
Pneumonia	371	164
Bright's Disease	338	149
Apoplexy	275	121
Tuberculosis	259	114
External Causes	218	96
Cancer	183	81
	2026	
All Deaths 3229	Per Cent	63

1924 DISEASES	Population 229,100 DEATHS	RATE
Organic Heart Disease	473	207
Bright's Disease	318	139
Apoplexy	287	125
Tuberculosis	266	116
Pneumonia	246	107
External Causes	221	97
Cancer	218	95
	2029	
All Deaths 3019	Per Cent	67

1925	Population 230,600	
DISEASES	**DEATHS**	**RATE**
Organic Heart Disease	523	226
Bright's Disease	364	157
Apoplexy	271	117
Tuberculosis	239	104
Pneumonia	229	99
Cancer	225	97
External Causes	186	81
	2037	
All Deaths 3115	Per Cent	65

1926	Population 232,200	
Organic Heart Disease	510	219
Pneumonia	379	164
Apoplexy	374	161
Bright's Disease	351	151
Tuberculosis	253	109
Cancer	235	101
External Causes	220	95
	2322	
All Deaths 3449	Per Cent	67

1927	Population 233,700	
DISEASES	**DEATHS**	**RATE**
Organic Heart Disease	469	201
Apoplexy	360	154
Bright's Disease	313	134
External Causes	237	102
Cancer	235	101
Pneumonia	231	99
Tuberculosis	222	95
	2067	
All Deaths 3009	Per Cent	69

1928	Population 235,300	
DISEASES	**DEATHS**	**RATE**
Organic Heart Disease	586	250
Apoplexy	356	152
Bright's Disease	280	119
Pneumonia	259	110
Cancer	245	104
External Causes	227	95
Tuberculosis	192	82
	2145	
All Deaths 3204	Per Cent	67

1929	Population 236,800	
DISEASES	**DEATHS**	**RATE**
Organic Heart Disease	507	215
Apoplexy	352	149
Pneumonia	314	133
Bright's Disease	282	119
Cancer	244	103
External Causes	198	84
Tuberculosis	193	82
	2090	
All Deaths 3134	Per Cent	66

1930	Population 238,380	
DISEASES	**DEATHS**	**RATE**
Organic Heart Disease	498	209
Apoplexy	357	150
Bright's Disease	309	129
External Causes	278	116
Pneumonia	247	103
Cancer	238	100
Tuberculosis	164	68
	2091	
All Deaths 3259	Per Cent	64

1931	Population 239,917	
DISEASES	**DEATHS**	**RATE**
Organic Heart Disease	495	206
Apoplexy	327	136
Bright's Disease	305	127
Pneumonia	278	116
Cancer	262	109
External Causes	251	105
Tuberculosis	209	88
	2127	
All Deaths 3306	Per Cent	64

1932	Population 241,471	
DISEASES	**DEATHS**	**RATE**
Organic Heart Disease	386	160
Bright's Disease	345	143
Apoplexy	312	129
Pneumonia	294	122
Cancer	285	118
External Causes	231	96
Tuberculosis	168	70
	2021	
All Deaths 3176	Per Cent	64

1933	Population 243,007	
DISEASES	**DEATHS**	**RATE**
Bright's Disease	440	181
Organic Heart Disease	425	175
Apoplexy	348	143
Cancer	305	125
Pneumonia	277	114
External Causes	217	90
Tuberculosis	178	74
	2190	
All Deaths 3238	Per Cent	68

At the same time the general death rate of the state has not markedly changed. For more individuals, therefore, these seven trapdoors are yawning, or the paths of the passersby are tending to converge in certain specified directions. Even in so short a time as thirteen years there have been noticeable changes relatively in the positions of the seven. Organic heart disease, Bright's disease, deaths from violence, and especially cancer are becoming of increasing importance. One at least, tuberculosis, shows a most material improvement and may soon have been removed from the list. Of the others, either little of definite trend is observable or there are extremely wide variations in the yearly fluctuations.

Of those becoming of increasing importance organic heart disease first deserves consideration. During a number of years there have been more deaths from that one cause than there were from two other causes of the seven taken together. It must be remembered, however, that actually a large number of diseased conditions are grouped together under the heading, organic heart disease. On this account some of the fluctuations can be ascribed to alterations either of the clerical procedure of classification or of changes in nomenclature. The latter explains to a very great extent the drop in the number of deaths reported in the past two years. During these, the latest official nomenclature of diseases was used, this superseding the older nomenclature followed since 1920. The figures are, therefore, not strictly comparable. Under the older numbers in the official nomenclature (No. 79) were grouped deaths now to be found under Nos. 92, 93, 94 and 95 in the newer classification, not all of each group, but sufficient to make an accurate comparison most difficult to obtain. Delaware's experience in 1933, during which deaths from organic heart disease dropped to second place, does not seem to conform to the experiences of a number of her sister states, which report that with them the number of deaths from heart disease still tops the lists.

It is a quite debatable question whether or not this, common though it be to the experience of a number of places, is an actual representation of the facts. Undoubtedly the death certificates filed in recent years give closer approximations to the clinical picture than did those received a decade or a score of years ago. Some are now almost uncomfortably voluminous in the detail which is imparted, approximating or in some instances actually consisting of the complete post mortem diagnosis, and naming departures from the normal in respect of a number of the vital organs. Here trouble lies in wait for the classifying staffs. There are certain cardiac conditions which if mentioned, govern the tabulation, appropriating to themselves, so to speak, the responsibility for the death, though reasonable arguments can be advanced in support of a differing contention. One might so argue, for example, in respect of the death of one subject to some forms of myocardial disease, a broncho-pneumonia being the acute illness. Under the classifying rules the death must be called a cardiac death.

It is, therefore, quite possible that the change of place as between Bright's disease and organic heart disease which is observable in the year 1933 results from an alteration of procedure respecting tabulation. A very large number of death certificates refer both to cardiac and renal conditions. The two causes between them account for approximately one-third of all the deaths caused by the entire group of seven, or about twenty per cent of all the deaths occurring in the state. Under the newer system of classification some deaths which formerly were classified as cardiac are now attributed to a renal condition and vice versa. Under the rules now followed, for example, a death certified to be caused by cardio-vascular-renal disease is given to a renal classification, while one said to be cardio-renal only is given a heart number. If, however, the cause of death is stated to be chronic nephritis, the death is said to be due to the renal condition even if a heart lesion was named as being in existence at the same time.

The deaths from apoplexy are a fairly constant feature, third in height at the end of the period as it is at the first, if we except tuberculosis, which almost immediately thereafter gives evidence of declining importance.

Taken together the cardiac, renal and cerebral deaths form a group, in which both certification and classification are at times difficult, and which might be considered as due to developing defects in certain important mechanical processes without the proper performance of which the continuance of life is impossible. Chance in the form of a communicable disease or an undue physical exertion may have determined which, the heart, the arteries or the kidneys should first give evidence of faulty function. These are essentially the group which has carried for itself the name of the degenerative diseases, their onset being in a way the penalty of having lived.

The place which cancer occupies in the group is somewhat unique. There is little yearly fluctuation, but almost yearly there is a rate increased over that of the former years. It has climbed steadily from the lowest position at the first of the period to the fourth at its end. With respect of this cause, at least, alteration of nomenclature or method of classification cause little difficulty, the figures being quite comparable throughout the period. There is every evidence that the rate in succeeding years will be still higher, unless in some way the trend can be arrested. How can that be done?

Of less importance than cancer, showing wider fluctuations, somewhat higher in elevation, though occupying the same relative position throughout the period are the deaths from external causes. Included in these are the deaths associated with industry and those which occur from auto accidents. The depressed economic conditions of recent years might have been expected to be a factor in the lowering of the rate, if fewer persons were during the period employed in industrial positions. Deaths from auto accidents, it would appear, must continue to increase in frequency. They numbered but 22 in 1920 as opposed to 57 in 1933. As with cancer, the height to which the rate will arise is entirely conjectural. Can supervision and instruction, the only restraining agencies, overcome the many factors which have been or will be operating towards higher rates?

The situation which pneumonia presents is as unique in its way as is that of cancer. Fifth in importance at the first of the period it was in the same relative position at the end, though in the interval there had been years marked by high fluctuations. The first and the last years appear to give what might be considered as basic or minimal rates. There were in the intervals three well marked peaks, occurring in 1923, 1926 and 1929. In each of these years influenza was present in the state to a degree in excess of its normal incidence, the experience in Delaware conforming to the experience of a number of other communities. This experience is that one should expect minor returns of influenza in well marked waves of incidence at about three year intervals, with waves of immensely greater magnitude at intervals of twenty or more years.

What can be said respecting tuberculosis? It was second in height in 1921; it fell rapidly to become the lowest of the seven in 1927, and has maintained that position since that time. We can expect it to remain the lowest.

But—and this is the disturbing feature—for the past four years there has been little improvement. During two of the past three years there have been rates higher than those of the years immediately preceding. Must there be a readjustment of the control program, an extension of the control effort? Is the slacking up of the improvement only the result of the law of diminishing returns?

A greater number of deaths means more infection in the general population. There will thence result more deaths, and thus the disease will be perpetuated. This is an ominous prospect surely.

And what—an interesting speculation—will replace it if in the future it passes from the group? Will it be diabetes, the steady increase of which from the rate 11 to 25 is a feature of the story of the past 15 years? If the present trends are maintained, they are due to cross within the next decade.

What, we naturally ask ourselves, are the causes for and the significances of this grouping and the alterations which have developed with the years? There must be some reason for the banking up of deaths in certain classifications. If deaths occur now more frequently from certain disease there must be others of which there are relatively fewer. This is as obvious in argument as it is apparent in fact. The reduction of infant mortality which is a feature of the experience of recent years, and the diminution in the number of deaths from communicable diseases which beset the pathways of those of the younger ages, have the tendency to pass on to their destiny at later ages those from whom death has been temporarily averted. When, for these, the end comes it is apt to come from those causes which are induced by the very act of living. The machinery develops defects and eventualy ceases to function. Even the heart, which has been described as the greatest pump ever constructed, in time becomes overburdened and the result is inevitable.

It is easily understood, therefore, that the banking up of deaths in these classifications is closely connected with that process which for years has been going on in the state: the increasing of the average age of the population and the lengthening of the average life. An old report gives the ages of 971 residents, all who died in the city of Wilmington, in the year 1883. These persons had lived an average of 28 years only. As many of them had died in the years from infancy to the age 22 as had died in all the subsequent ages, or in other words the median age at death was that figure. At the first of the present century the figures had become 35 and 31, respectively. In 1921 the average age at death was 44 and the median age had passed that figure and was a little over 50. In the year 1933, ten years had been added to the average age at death which is now 54.9, while as many persons had died aged 63 or over as had died in all the ages under that figure.

Meanwhile a similar change was taking place in respect of the average age of the living. It cannot be expected that these figures would show as marked change as have the average ages at death. There has been, however, an actual aging of the population. The average Delawarean at the time of the 1920 census was aged about 29 years and nine months. In 1930 the average age had become about 31 years and five months, brought to that figure largely as a result of the falling birth rate and the fewer individuals in the lowest age groups.

There are implications from these conditions of the very greatest importance. Taken in conjunction with the falling birth rate and the imminence of a stationary population the national significance cannot be wholly disregarded. And, in this era of "new deals" are we far removed from the period when there must be a shifting of the preventive work in which all branches of the medical profession are engaged?

Hitherto, much of that work has been directed against the communicable diseases. But the number of deaths which occurred in the state in 1932 from typhoid fever, measles, scarlet fever, whooping cough and diphtheria were only 39, little more than half the number of diabetes deaths, and very much below that needed to qualify for admission to the group of seven being considered.

The inference seems to be plain that here in the future more of our attention must be directed.

UNDULANT FEVER

C. A. Sargent, M. D.

Dover, Delaware

Either undulant fever is becoming more prevalent in this State or more cases are being recognized and reported. There were two cases reported in 1931, two in 1932, six in 1933 and seven to July 1st, 1934. The first death from this cause was reported in May, 1934.

All cases reported have been investigated and histories obtained. The history of the fatal case is as follows: G. S., male, colored, age 31 years, instructor in biology. Resident of Delaware since September 1930. For several days before onset of his illness on May 14th, 1934 he was very irritable. He first complained of pains in the right side of the face and in the right arm. He had previously been told that one of his molar teeth should be extracted; thinking that the tooth was the cause of the pain, he had it extracted on May 15th. That evening he complained of intense pain in the face, neck and right arm. He was confined to bed. On May 16th he complained of being chilly and having pains in the right arm and hip and in the abdomen. He became very apprehensive. On May 17th he had chills, intense pain in the right hip and leg and did not talk unless spoken to. On May 18th a physician was consulted. At that time his temperature was 100 degrees. He had chills and said he ached all over. His right testicle was swollen and very tender. The pain continued in the hip and abdomen. On May 19th his temperature was 103. The pains and chills or chilly sensations continued. May 20th, temperature 102. Could not walk to the toilet without assistance. Symptoms continued about the same. May 21st admitted to the hospital. Temperature 104. Severe headache, could not move his limbs without assistance. Ice bag placed on testicles. Pain severe in abdomen and right hip and leg. May 22nd, temperature normal. Symptoms remained about the same. May 23rd, ice packs on the testicles were being changed every fifteen minutes. The nurse, upon returning to the patient's room to change the ice pack, found him dead. Laboratory analysis of the patient's blood submitted on May 22nd showed positive agglutination for brucella abortus in 1 to 2560: Collodial gold on spinal fluid produced a questionable reaction in zone two. A complete post-mortem examination was not made.

Milk supply was from a thirteen-cow dairy, the entire production being used in the institution. In November 1933 the entire herd was blood tested for contagious abortion and ten were found to be positive reactors. The reactors were treated during the week of December 1st. They were again tested about December 30th and six were found to be reactors. On January 15th, 1934 they were again tested and the same six were positive. In March 1934 two of the reactors aborted. Meat and butter supply was from a national company whose products are widely used throughout the State.

This is the only malignant case reported and investigated. All other cases have had histories very similar to the following: G. M., female, white, age 30 years. First symptoms on May 1st, 1934, when she complained of feeling chilly. This condition continued at intervals until May 25th when she had definite chills. Temperature, 101 degrees. Headache and loss of appetite. May 26th, laboratory analysis showed positive agglutination for brucella abortus in 1 to 5320. Temperature range was from 100 to 102 for nine days. Temperature was normal June 3rd. No recurrence of temperature has been reported.

Of the seven cases reported to July 1st, 1934, five were from Kent County, located in Dover and the area north to the New Castle County line. Two cases were reported in Sussex County. One significant feature is that no cases have been reported among individuals using pasteurized milk.

In view of the fact that undulant fever appears to be more prevalent, the State Board of Health is undertaking a thorough investigation of the situation. Milk from all dairies, the products of which are consumed in the State, has been analyzed and approximately forty per cent have shown positive agglutination for brucella abortus. The milk from each cow in the herd at the institution in which the death occurred has been analyzed and five of the eight cows now being milked showed positive reactions. Further studies will be made of this milk to determine, by culture, the type of organism present. On June 19th another case was reported from the same institution. It is possible that this particular herd may be infected with the porcine (suis) type which is the most virulent type of brucella organisms.

The most frequent source of infection with brucella organisms is from milk or dairy products of cattle or goats.

The disease has been called brucellosis in honor of Bruce, who in 1887 recovered the cocco-bacillus from the spleen and called it micrococcus melotensis. In 1897 Bang recovered the "bacillus abortus" from cattle. Evans in 1918 determined that Bruce and Bang had described the same organism. Traum found the porcine (suis) type in pigs. Meyers classified the brucella organisms as melotensis (goat), abortus (cow) and suis (pig). These types are not, however, specific for these animals. The brucella abortus variety is the one most commonly found in this country. The porcine or suis variety is the most resistant and the most virulent. Brucella organisms tend to lodge in the pregnant uterus. The udder infection causes intermittent shedding of organisms and yet in appearance the cow may seem to be perfectly normal. A positive blood test indicates infection, but does not necessarily signify that the brucella organisms are being given off in the milk. To determine whether an animal is producing infected milk it is necessary to do agglutination tests on the milk. Surveys in various areas in this country indicate that from twenty-five to thirty per cent of dairy herds are infected.

There are three types of the disease all characterized by an incubation period of from six to fourteen days, onset with chills, malaise, headache, loss of appetite and frequently acute sciatic pains. The most characteristic feature is the step-like rise in temperature, reaching 104 or 105 degrees by the fourth or fifth day and continuing for twelve or fifteen days without much variation. In two or three weeks there is usually a relapse, with a repetition of the fever. This condition may continue for three or four months, and in some cases as long as two years. The malignant variety may simulate typhoid fever and it frequently terminates fatally in a short time. The intermittent variety is characterized by intermittent fever over a period of several weeks or months. The ambulatory type of the disease is one in which the symptoms are almost entirely absent, and the patient may be acting as a carrier.

Diagnosis: The outstanding feature is the peculiar course of the fever, enlarged spleen, night sweats, secondary anemia, and at times, sciatic pains and orchitis. Positive diagnosis is by laboratory agglutination or isolation of the specific organism of blood culture or specific compliment fixation reaction of patients' serum.

UNDULANT FEVER

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Undulant fever (brucellosis hominis) has in all probability afflicted mankind for many centuries, but the disease was shrouded in obscurity until the discovery of micrococcus melitensis by Bruce in 1886. It was isolated from the spleen of patients who had died of a disease named Mediterranean or gastric fever.

Brucella abortus was first isolated and described as a bacillus by Bang, assisted by Stribolt, in 1897. They isolated the organism from fetuses and fetal membranes of cows that had aborted, and later established the fact that it was the cause of infectious abortion of cattle. The organism was later isolated from the milk of cows by Shroeder and Colton in 1911, and by Smith and Falyan in 1914. Brucella abortus has been found in animals in all parts of the world. It has been recovered from naturally infected horses, fowls, dogs, sheep, and wild buffalo.

Brucella suis was first isolated by Traum in 1914 from fetuses expelled prematurely from sows. The hog appears to be the true host of brucella suis. The other two species do not appear to infect the hog naturally, and it is very difficult to infect hogs artificially. Brucella suis has been isolated from the horse, the fowl, the cow, and the dog, all of which were naturally infected.

It is now a well established fact that all three species of brucella are pathegenic for human beings. Undulant fever may be transmitted to man by the handling of infected animals and carcasses and by the indigestion of raw dairy products which contain the living organism.

Undulant fever may be detected by the cultivation of the specific organism from the blood and urine, or by the demonstration of the specific antibodies in the serum. Because of the difficulty and uncertainty in the cultivation of the organisms, failure of the growth is of no significance. If the organism is isolated, undulant fever is certain.

Blood for culturing brucella may be collected at any time during the pyrexial period. Brucella suis and brucella melitensis are easily cultured from the blood of those infected. For some reason, not yet known, it is difficult to obtain brucella abortus from human blood. The latter species grows out very slowly, if at all, in the inoculated broth (Huddleson).

In order to obtain a culture of brucella from urine, the sample should be taken aseptically. The organism has been cultured but very few times from the urine of infected human beings and infected cattle. Brucella is easily obtained from the urine of naturally infected goats, artificially infected guinea pigs, and monkeys.

Blood for the agglutination test should not be collected until two weeks from the onset of the disease. It should be collected in the Keidel tube. The technic used by this laboratory for carrying out the agglutination test is essentially the same as that used in the United States Public Health Service Laboratory in Washington.

Preparation of Antigen. In the preparation of antigen we use the abortus strain supplied by the U. S. Public Health Service

Laboratory and known as 456. This antigen is grown on liver infusion agar in Blake bottles, with a hydrogen ion concentration of pH 6.8. Each bottle is seeded with the growth from glucose agar slope suspended in 2 cc of physiological salt solution. After the bottles are incubated at 37°C. for 48 hours the growth is then harvested in a small amount of physiological salt solution containing .5% carbolic acid. This stock antigen is diluted to the proper density when tests are made.

Test. The serum is separated from the clot and heated in a water-bath at 56°C. for 30 minutes. The agglutination test is carried out in test tubes 75 mm. long by 12 mm. in diameter. The serum is diluted 1:10, 1:20, etc. to 1:2560 in physiological salt solution, and .5 ml. of the various dilutions are placed in each test tube. .5 cc of antigen of a turbidity of 1,000 is added to each tube making the final dilutions from 1:20 to 1:5120. These tubes are incubated in a 55°C. water-bath for 4 hours, then they are removed to an ice chest where they are allowed to stand until the following day, when readings are made. When complete agglutination appears in 1:5120, dilutions are made still higher. A portion of the unheated serum is also tested by the Huddleson method for evidence of undulant fever.

Results. The heating of the sera in a water-bath at 56° for 30 minutes usually causes the non-specific agglutinins which occur in normal blood to disappear. If there is complete agglutination in a dilution of 1:80 or higher the specimen is reported positive. A diagnosis of undulant fever may safely be made if the clinical findings strongly support the laboratory findings.

Cows Milk. Milk is examined by agglutination test to determine whether udders of cows are infected with brucella abortus. For this test 10 ml. of milk is pipetted into a small test tube containing a pinch of rennin. This tube is placed in a slanting position in an incubator for two hours to permit the serum to separate. After serum has separated it is poured into a clean test tube. This serum is then diluted with antigen of proper density to 1:25, 1:50, 1:100, 1:200, and 1:500, and incubated at a temperature of 37° for 24 hours. According to Torry, complete agglutination in a dilution of 1:50 or higher shows the presence of infection of udder.

During the past two months, I have examined milk from approximately all of the dealers supplying milk to the towns of this state, with exception of Wilmington, and have found a large number to be positive.

ALUM PRECIPITATED TOXOID IN THE PREVENTION OF DIPHTHERIA

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Forty years ago, before the use of antitoxin became general, diphtheria was one of the most dreaded of diseases, accompanied by a mortality of at least 30%, while the loss of life from the laryngeal form of the disease was simply appalling. While almost every remedy in the pharmacopoeia had been used in its treatment, none had been found that had any particular value.

The first attempt to use antitoxin in the cure of diphtheria in humans was made in von Bergman's clinic in 1891. The results, while encouraging, were not altogether satisfactory, owing to the fact that serums were weak, and the doses given too small. More powerful serums were made and larger doses given, so that by 1896 a marked decrease in the mortality of diphtheria was apparent where the antitoxin was being used. Since then diphtheria antitoxin has been the means of saving countless lives, and the treatment of diphtheria, instead of being a reproach to medicine, has become the model of what the treatment of an infectious disease should be.

While the morbidity statistics of the Delaware State Board of Health do not extend back far enough to give an accurate comparison of the results before and since the use of antitoxin, the following cases taken from death records in possession of the State Board of Health will give some idea of conditions then and now.

Name		Address	Age	Date of Death	Cause of Death
Hammond,	R.	Cedar Creek		9-30-1891	Malignant Diphtheria
"	Sallie	" "		9-30-1891	Malignant Diphtheria
"	Anna	" "		9-18-1891	Malignant Diphtheria
Short,	Ida M.			7-2-1891	Diphtheria
"	Luther			6-29-1891	Diphtheria
Mosely,	William	Milton	6 yrs.	9-21-1888	Diphtheria
"	Sallie	"	8 yrs.	9-28-1888	Diphtheria
"	John W.	"	10 yrs.	10-2-1888	Diphtheria
"	Willard	"	16 yrs.	10-6-1888	Diphtheria
"	Levy	"	18 yrs.	10-8-1888	Diphtheria
"	Caroline	"	19 yrs.	10-12-1888	Diphtheria

These were all children of Hick Mosely of Milton, Delaware.

In 1913 Bela Schick discovered that toxin and antitoxin mixed might be used to produce an active immunity which was much more lasting than the passive immunity produced by antitoxin. This was largely supplanted by toxoid, which was discovered by Ramon about 1925. The great advantages claimed for it were that it did not contain any blood serum and therefore was less likely to bring about sensitization to horse serum, and that only two doses were required, instead of the three of toxin-antitoxin.

ALUM-TOXOID

As described by Wells, Graham, and Havens of Alabama State Board of Health Laboratories, the method of preparation of alum precipitated toxoid is as follows:

"To the toxoid, prepared in the usual manner, by detoxification with formaldehyde, aluminum-potassium sulphate was added until no further precipitate occurred. (This requires from 2 to 2.5% of alum). The coarse flocculent precipitate which is formed settles in a few hours, leaving a clear supernatant which is siphoned off, and an amount of 0.85% NaCl solution is then added to bring the suspension to the original volume of the whole toxoid. After vigorous shaking the precipitate is allowed to settle again, and again the supernatant is siphoned off and an equal volume of normal salt solution is added.

"In the original supernatant 60% to 70% of total nitrogen remains unprecipitated, but the determinations made after washing show that the unwashed precipitate contains a considerable amount of protein which is not antigenic. The washing process, as a general rule, removed about 50% of the protein present in the unwashed precipitate without materially diminishing the flocculating values. The final nitrogen content of the eight lots of toxoid on which we have complete determinations of the washed precipitate varied from 13% to 20% of the amount originally present in the untreated toxoid. It is conceivable that this comparatively small protein content could materially diminish the reactions following injections. This, in fact, was found to be true both in guinea pigs and in the immunization of children."

Antigenic tests in guinea pigs indicated that a high degree of immunity is produced by a single injection of five units, resulting in protection against as much as 450 minimum lethal doses of toxin. Such a solid immunity is, of course, far beyond that resulting from a single injection of the ordinary soluble toxoid. After much experimentation on guinea pigs it was considered safe to use the product on humans.

Graham, Murphree and Gill describe their work with children as foillows: "A total of 798 children have been given a single injection of alum precipitated toxoid. These may be divided for purposes of discussion into three groups. Groups 1 and 2 consisted of children of school age who were found to be strongly Schick positive and who were retested from two to six months after a single dose of toxoid. Group 1 received toxoid containing 10 units per cubic centimeter, while group 2 received toxoid containing 5 units per centimeter. Group 3 consisted of children who were given the one injection of toxoid (either 5 or 10 units) without a preliminary Schick test but who were tested from two to four months later. Of the 613 children in this group, 444 were in the age group 0 to 6 years.

IMMUNITY STATUS OF 798 CHILDREN FOLLOWING A SINGLE INJECTION OF PRECIPITATED TOXOID

Group	Number of Children	Original Schick	Toxoid	Re-Schick Positive	Re-Schick Negative	Negative Per Cent
1	99	All positive	1 cc., 10 units	6	93	93.9
2	86	All positive	1 cc., 5 units	8	78	90.7
1 & 2	185	All positive	1 cc., 5-10 units	14	171	92.4
3	613	Unknown	1 cc., 5-10 units	21	592	96.57

"The results of immunization of children indicate clearly that a single injection of the alum precipitated toxoid results in immunity in a high percentage of cases. A single injection appears to be as effective as two or three injections of the best unprecipitated toxoid. The group of children who are known to have been strongly Schick positive prior to the injection of toxoid yielded 92.4 per cent completely Schick negative results from two to six months later. While the immunity status of group 3 was not known before the administration of the toxoid, the important fact, from a practical standpoint of mass immunization against diphtheria, is that one may expect at least 95 per cent immunity following a single injection. The effect in accelerating the prevention of diphtheria by mass immunization is obvious."

It is generally considered by investigators that the effectiveness of precipitated toxoid as an immunizing agent is due to its relative insolubility. This brings about slower absorption and slower excretion, hence less loss of antigen by excretion, and a prolonged antigenic stimulation. Soluble toxoid has been shown to be excreted rapidly, and its stimulus to be transient. Part of the increased effectiveness may also be due to the local damage to the tissues caused by the alum. A small nodule may be felt under the skin in a day or two after administration. This disappears in from three to six weeks.

Since the reports from the Alabama State Board of Health, alum precipitated toxoid has been used in many States and is now in use pretty generally throughout the United States. Since January 1, 1934, it has been used exclusively by the Board of Health of Delaware. Since that time, 2,861 children have been given one dose of the alum-toxoid in Delaware. No Schick testing has been done on this group as yet.

Advantages of alum-toxoid over ordinary toxoid and toxin-antitoxin are, as we see them:

(1) The probable immunization of a larger percentage of children treated.

(2) The fact that only one dose is required. In the first place it is easier to get the parents to consent to a child getting one dose than two or three. Then for one reason or another with toxin-antitoxin or ordinary toxoid we have always had from ten to twenty per cent who did not take the full number of doses.

THE TREATMENT OF PULMONARY TUBERCULOSIS

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After a diagnosis of pulmonary tuberculosis has been made one is confronted with the proper treatment of the case. It might be stated that no two cases of tuberculosis are identical, so that no hard or fast rules are applicable to all cases. However, fairly definite procedures of treatment can be set forth which will apply to each individual case having a certain type and extent of lesion and presenting certain findings. That is, of two patients both having minimal pulmonary tuberculosis, one a young adult, the other advanced in years, one with a positive sputum, the other negative, one showing marked toxemia, the other practically free from toxic symptoms, each will require an entirely different line of treatment.

Tuberculosis being infectious and often acute at the time of onset, it is quite surprising the extent of lung involvement a patient may have on first consulting a physician for the ailment. Therefore, it is by no means true that patients on first visit to a physician are beginning or minimal lesion-type cases; as by the time the lesion has progressed to the point of producing sufficient toxemia to cause the patient to seek medical advice, the majority are found to be in the moderately or far advanced stages of the disease.

Patients are classified by the American Sanatorium Association as follows:

Lesion—MINIMAL (Incipient). Slight lesion limited to a small part of one or both lungs. No serious complications.

MODERATELY ADVANCED. A lesion of one or both lungs, more widely distributed than under "Minimal," the extent of which may vary, according to the severity of the disease, from the equivalent of one-third the volume of one lung to the equivalent of the volume of an entire lung with little or no evidence of cavity formation. No serious tuberculosis complications.

Far Advanced. A lesion more extensive than under "Moderately Advanced," or definite evidence of marked cavity formation, or serious tuberculosis complications.

Symptoms—A. Slight or None. Slight or constitutional symptoms including particularly gastric or intestinal disturbances or rapid loss of weight; slight or no elevation of temperature or acceleration of pulse at any time during the 24 hours. Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent.

B. Moderate. No marked impairment of function, either local or constitutional.

C. Severe. Marked impairment of function, local or constitutional.

This classification provides for the following groups and sub-groups:

Minimal A
Minimal B
Minimal C
Moderately Advanced A
Moderately Advanced B
Moderately Advanced C
Far Advanced A
Far Advanced B
Far Advanced C

Before any definite line of treatment can be recommended or given, one must know several things about the patient, such as the type and extent of the lung involvement, whether or not a positive sputum exists, the degree of toxemia, the size and extent of any cavity formation, and other data of somewhat minor significance, as presumable duration of the disease, the age of patient, economic conditions, and any weight fluctuation.

Treatment may be divided into two groups, namely: routine medical, and surgical. However, the proper treatment of each individual patient is sufficient rest of the diseased area to promote healing, whether it be bed rest alone, a surgical procedure, or a combination of both.

Cases can often be grouped accurately at the time the diagnosis is made as to the proper line of treatment to recommend, while others will require a period of observation of the lesion before the future management of the case can be definitely ascertained. Also, the management of each individual patient may change from medical to surgical or vice versa while undergoing treatment.

Medical Cases

Briefly, patients requiring medical management or observation would consist of the following types:

Minimal Cases:

Bilateral lesions.

Unilateral lesions which do not appear soft or caseous and presenting few or no symptoms.

However, some physicians recommend immediate collapse therapy on all young adult patients regardless of the extent of the lesion.

Moderately Advanced Cases:

Bilateral and somewhat similar type lesions in both lung fields.

Unilateral or bilateral lesions which are strand-like in character and show a tendency towards retrogression.

Far Advanced Cases:

Bilateral lesions with cavitations which are so extensive that sufficient lung aeration would not be left after collapse of the diseased areas.

Grave extra-pulmonary complications.

Terminal cases.

Surgical Cases

Suitable surgical cases would comprise the following:

Minimal Cases:

Unilateral soft or caseous lesions, especially in young adults.

Moderately Advanced Cases:

Fairly unilateral lesions which show no definite tendency towards healing.

All cavity cases whether unilateral or bilateral.

Far Advanced Cases:

Some form of surgical treatment should be attempted on practically all of these cases if at all feasible, unless the lesions are strand-like in character and no cavities are present. As the late Dr. Barnes of Rhode Island State Sanatorium in a study of over one thousand untreated cavity cases showed an average duration of life of 15.8 months after the diagnosis of cavitation had been made.

Consequently, if at all possible, all cavities must be closed by some form of collapse therapy.

Laryngeal and intestinal complications do not counter-indicate surgical treatment unless grave.

Medical procedure consists in absolute confinement to bed. However, favorable cases showing slight or no toxemia may be allowed bathroom privileges if the bathroom is not too distant and is located on the same floor level as the patient's room. The length of time of this bed rest will vary greatly depending upon the type and extent of the lesion and will be governed practically entirely by serial X-ray films. The lesion should be retrogressing or becoming strand-like in character before any form of exercise is permitted. Cessation of symptoms does not mean that the patient may be allowed exercise but only signifies a more favorable outlook on the case.

It may be necessary to use some form of medication at times for specific symptoms. However, drugs should be used sparingly and only for a short duration, as their continued use tends to upset the stomach and a more aggravating condition may be caused than the one for which the drug was originally intended. In some cases at times it will be, however, necessary to use a sedative to control the cough or to promote sleep as well as to relieve other distressing symptoms.

Laryngeal lesions respond quite favorably to cauterization.

Intestinal lesions are treated with heliotherapy, cod liver oil and tomato juice, and pneumo-peritoneum; also various combinations of the above. However, for any definite permanent results to be expected or obtained in patients with laryngeal and intestinal complications it is quite imperative that adequate treatment be employed to improve the lung lesions.

The three main surgical procedures are:

Artificial Pneumothorax.

Phrenicectomy (temporary or permanent).

Thoracoplasty.

Also, various combinations of the above.

Minimal:

Border-line minimal cases in which a question arises as to whether or not they should be entirely treated medically or some form of surgery employed, will probably do better if a temporary phrenicectomy is performed; thereby giving that lung additional rest along with the bed rest. The phrenic nerve will regenerate in from four to six months, the diaphragm function again, and the only harm done is a hair-line scar above the clavicle.

Moderately Advanced and Far Advanced Cases:

1. Unilateral lesions which appear soft or cavernous.
2. Fairly unilateral cases without soft or caseous lesion in the collateral lung.
3. Bilateral cases with unilateral or bilateral soft or cavernous lesions provided they have not advanced to the terminal stage.

Cases of types No. 1 and 2 are generally best suited for artificial pneumothorax, which if unsuccessful, are followed by phrenicectomy, while a few come to thoracoplasty.

Cases of type No. 3 are suitable for the consideration of a bilateral pneumothorax, or pneumothorax on one side and phrenicectomy on the other. Also, artificial pneumothorax can be supplemented with phrenicectomy, temporary or permanent, on the collapsed side. It might be briefly stated that all patients, in whom sufficient collapse is not obtainable by artificial pneumothorax or phrenicectomy, are suitable cases for the consideration of thoracoplasty.

A PRELIMINARY REPORT OF TUBERCULIN TESTING IN DELAWARE SCHOOLS

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Following the endorsement of a definite outlined tuberculin testing program by the State Medical Society last fall, we have been able to tuberculin test the pupils in seven schools throughout the State, as well as a number of children in our chest clinics.

Only those pupils were tested whose request cards were signed by parent or guardian and by their family physician. Request cards, together with a printed slip explaining the purpose of the test, were given out to the pupils by the school officials. Letters were also sent to the physicians in each community some time before the testing in that community was to be done. No attempt at follow-up of individual cases was made. A response of 40.3% of the total enrollment in the schools tested was obtained. The response in the individual schools varied from 24.6% to 53.5%.

Patients tested at the chest clinic were those referred by their physicians because of history of contact or because of illness, and those who were members of families known to contain active cases of tuberculosis.

The tests were made with freshly diluted solutions of Old Tuberculin-Intradermal injection of 0.1 cc. of the solution was made on the palmer surface of the forearm. The first test was made with the equivalent of 0.01 mgm. of Koch's Old Tuberculin. Those who showed no reaction were given a second test with the equivalent of 0.1 mgm. Old Tuberculin. Because of absence from school or because the request cards were not properly filled out at the time of the first test, a small number were given only the single test.

A reaction was considered to be positive if a definite area of edema was present at the site of injection in 48 hours. Reactions were graded as:

(1) One plus if the edema was less than 10 mm. in diameter.

(2) Two plus if the edema was between 10 mm. and 15 mm. in diameter.

(3) Three plus if the edema was more than 15 mm. in diameter, but without necrosis.

(4) Four plus if an area of necrosis was present.

If the reaction to the first dilution was questionable it was considered negative and the test was repeated with the second dilution. While a record of the degree of reaction for each individual has been kept, in grouping the results of testing reactions have been listed as either positive or negative.

In so far as possible all pupils giving a positive reaction were referred for x-ray. Many of the reactors who were unable to afford a roentgenologist were x-rayed at Brandywine Sanatorium. Others were referred elsewhere by their physicians. As reports have not been received from all the x-rays taken elsewhere, only results of those taken at the Sanatorium will be included in this report.

TABLE NO. 1

						X-RAY FINDINGS			Childhood Lesions	
	School Enrollment	No. Tested	No. Reacted	% Reacted	No. X-Rayed	No. Positive X-Rays	Tracheo-Bronchial Nodes	Pulmonary Nodules	Stable	Unstable
Routine Clinics		99	38	38.3+	33	8	4	1	1	2
New Castle Wm. Penn School ...	600	148	68	45.9+	31	11	5	4		2
New Castle Buttonwood School	45	22	7	31.8	2	1				1
New Castle Booker T. Washington School	75	34	17	50	12	3	1	3		
Dover White	1072	430	137	31.6	115	43	21	19	3	
Dover Colored	308	165	46	21.2	39	14	9	3	1	1
Selbyville White	277	140	27	19.2	26	6	2	4		
Laurel White	953	406	76	18.7	40	27	19	6	1	1
Total	3330	1444	416	28.8+	298	113	61	39	6	7

Table No. 1 includes a resume of the results of testing and x-ray findings in the various schools and also in the routine clinics. It will be noted that the percentage of positive reactors varies from as low as 18.7% in the Laurel School, to as high as 50% in one of the New Castle schools. In Dover and New Castle, the two communities in which both white and colored pupils were tested, the percentage of reactors of the two races in each community more closely resemble each other than do those of the same race in different communities.

Table No. 2 shows the results of testing and x-ray study grouped according to age and sex of individuals tested; and also according to history of contact or non-contact with tuberculous infection. From a study of these tables we find that the percentage of reactors among contact cases is 54.8% as compared with a percentage of 27% for the non-contact group. Since all pupils whose

TABLE NO. 2

					CONTACTS			CHILDHOOD LESIONS		NON-CONTACTS			CHILDHOOD LESIONS	
Age Tested	Sex	No. Tested	No. Reacted	% Reacted	No. Tested	No. Reacted	No. X-Rayed	Stable	Unstable	No. Tested	No. Reacted	No. X-Rayed	Stable	Unstable
Under 6	M	20	7	38%	12	7	5		1	8				
	F	22	9		12	8	7	1	1	10	1	1		
6	M	58	12	17.3%	8	5	4			50	7	6		
	F	40	5		2	2	1			38	3	5		
7	M	51	9	15.1%	1	1	1			50	8	3		
	F	48	6		4	2	1			44	4	2		
8	M	55	14	20.1%	5	4	3			50	10	6		
	F	64	10		5	1	3			59	9	6		
9	M	70	19	23.8%	3	1	1			67	18	11		
	F	64	13		4	1	1			60	12	9		1
10	M	70	12	20.6%	6	1	1			64	11	10		
	F	75	18		7	5	2			68	13	9	1	
11	M	62	18	27%	3	2	2			59	16	13		
	F	71	18		4	2	2			67	16	13	1	
12	M	65	20	32%	5	3	3			60	17	13	1	
	F	94	31		5	3	1			89	28	22		
13	M	69	24	34.3%	2	1	1		1	67	23	13		1
	F	68	23		7	2	0			61	21	16		
14	M	59	21	30.6%	5	3	3			54	18	15		
	F	78	21		9	5	4	1	1	69	16	11		
15	M	37	13	39.1%	4	3	3			33	10	6		
	F	55	23		1					54	23	14	1	
16	M	33	17	39.7%	1	1	1			32	16	10		
	F	35	10		5	3	2			30	7	4		
Over 16	M	36	18	53%	3	2	1			33	16	17		
	F	45	25		3	1				42	24	10		
Total		1444	416	28.8%	126	69	53	2	5	1318	347	245	4	2

cards lacked information as to history of contact were placed in the non-contact group, it is possible that some of the positive reactors in the latter group are really contact cases. Five, or 3.9% of 126 contact cases tested, and 2, or 0.15% of 1318 non-contact cases tested showed presumable lesions requiring treatment, on x-ray study.

Of the 759 females tested, 212 or 27.9% had positive reactions.

Of the 685 males tested, 204 or 29.7% had positive reactions.

90 patients reacted to 0.1 mgm. O. T. after failing to react to 0.01 mgm. 22 members of this group showed demonstrable lesions on x-ray but in each case these were either calcified pulmonary nodules or calcified tracheobronchial lymph nodes, all representing apparently healed lesions.

Comment

As this work has only been carried on during the past few months, a response of 40.3% of the total enrollment of schools tested is a rather gratifying indication of interest on the part of physicians and parents in the communities visited. The results obtained represent, of course, only a section of each group tested; and, while they indicate the percentage of reactors and of lesions demonstrable by chest x-ray in each group of children, they cannot be taken as definite figures for the entire school group in the community.

The number tested is too small as yet to permit any definite conclusions. It is interesting, however, to note the variation in percentage of reactors in different communities —the similarity in percentage of two races in one community—the similarity between reaction of male and female pupils—and the large percentage of positive x-ray findings among contact cases as compared with those among non-contact cases.

It is also interesting to speculate as to whether a larger number of children could not be satisfactorily tested by including all contacts, and only the older children in the non-contact group; and, possibly, by using only the single test dose of 0.01 mgm. Old Tuberculin.

THE VALUE OF PRENATAL CARE DURING PREGNANCY

John B. Derrickson, M. D.
Frederica, Del.

What is prenatal care, in so far as it relates to the toxemias of pregnancy? It is a system by which the patient is seen and examined at regular intervals throughout pregnancy, and at each examination a diligent search made for a beginning or early toxemia.

During the past decade great strides have been made in the prenatal care given to expectant mothers. In certain localities in this country it has been demonstrated that a very large percentage, probably half, of the mothers and babies who die annually could be saved by proper obstetrical supervision and care during pregnancy and labor. In none of the abnormalities of pregnancy has prenatal care proven as effective as in the toxemias. Eclampsia has been reduced by careful antenatal supervision, and by the same means many women suffering from damaged kidneys have been enabled to live a longer and more useful life.

Today most maternity hospitals are conducting prenatal clinics, and even in many small villages, where no hospital facilities are available, the need of prenatal care is known, with the result that prenatal clinics are conducted by the State or county medical societies. This is indeed proof that the country is realizing the value of these preventive measures.

The toxemias of pregnancy account for approximately one-quarter of the total maternal mortality incident to childbirth. When we consider the effect of pregnancy on an underlying chronic nephritis we find the toxemias responsible for almost one-half the maternal deaths incident to childbirth. It has been estimated that more than 25,000 women die each year in the United States as a result of the immediate and remote effects of pregnancy. Of this number it is safe to assume that one-third are due to the effects of the toxemias of pregnancy.

The fetal mortality due to the toxemias is even greater. Eclampsia alone accounts for a fetal mortality of over 30 per cent. In the nephritis of pregnancy the fetal mortality is almost as high. The fetal mortality in the United States is close to 100,000 a year.

Fortunately, the various types of toxemia are associated with symptoms and findings that can act as danger signals if seen early and properly interpreted. It is the purpose of prenatal care to observe these danger signals as soon as they appear, to properly interpret them, and to institute the proper treatment.

In order that a system of prenatal care may be able to accomplish these aims, it must involve a routine examination of the patient every three weeks from the time that the first period is missed up to the end of the seventh month, and every two weeks thereafter until the end of pregnancy. The findings of these examinations must be recorded accurately in order that they may be properly interpreted. This is necessary in all maternity clinics, also in the private office of every physician who takes care of pregnant women. At each examination the weight is noted, the blood pressure taken, and the urine examined for albumen and casts. The patient is questioned as to any symptoms that may lead to the discovery of toxemia, such as headaches, visual disturbances, epigastric pain, and feeling of dizziness. At each visit it is the duty of the physician to see whether or not there is any edema, especially of the extremities. Should the patient complain of any visual disturbances, it is the duty of the obstetrician either to examine her eye grounds himself, or have this done by an ophthalmologist.

There are four types of toxemias which may occur during pregnancy and which can be recognized early by conscientious prenatal supervision, viz: vomiting of pregnancy, low reserve kidney, nephritis, and eclampsia.

Vomiting of pregnancy is usually easy to recognize and usually occurs during the first third of pregnancy, and the patient herself is aware of the disease. Many of these cases are cured by suggestive treatment, as well as by changing the dietary habits of the patient. Only a small percentage of the women suffering from vomiting of pregnancy who are given the proper prenatal care find it necessary to enter a hospital for treatment. Prenatal care is one of the most valuable aids in not only the prevention but also the cure of vomiting of pregnancy.

Low reserve kidney and eclampsia, with its forerunner, pre-eclampsia, occur in the latter half of pregnancy. Nephritis complicating pregnancy may be seen very early in the period of gravidity. It, therefore, becomes necessary that the patient be examined routinely from the beginning of pregnancy until term.

It is only by a careful recording of her blood pressure, urinary findings, presence or absence of edema, that we are able to recognize early any one of these types of toxemia. As soon as hypertension or albuminuria is noted the examination of the patient should be even more thorough. The whole purpose of prenatal care in these types of toxemia is to enable us to recognize them as early as possible and then to institute proper treatment.

This is the mildest type of toxemia. It manifests itself during the last three months of pregnancy and is characterized by a slight hypertension, rarely exceeding 150 systolic and 90 diastolic, and albuminuria which is never very great. This type of toxemia is not associated with marked edema, eye changes, epigastric pain, or severe headache. The outstanding characteristic of this type is that in subsequent pregnancies the patient's condition does not become aggravated, as in chronic nephritis or any other type of nephritis. The essential aim of prenatal care, so far as this type of toxemia is concerned, is to recognize it and to differentiate it clearly from nephritis. It is advisable to regard chronic nephritis, or any other of the nephritudes, in a pregnant person as a toxemia, because it is essential to distinguish between nephritis and the other types of toxemia.

Pregnancy occurring in a woman suffering from an underlying nephritis undoubtedly shortens her expectant duration of life by a large margin. If medical care is to be of any assistance to these patients it is essential that the underlying nephritis be recognized as early as possible and the proper treatment instituted. Sometimes it is possible to establish a definite diagnosis of nephritis during the first month of pregnancy, for the reason that pregnancy itself is the best of all known kidney function tests. Should hypertension, albuminuria, edema, or any symptoms such as headache and visual disturbances appear during the early weeks of pregnancy, the prognosis is grave, as the condition is undoubtedly one of permanent kidney or Bright's disease. Certainly all such patients should be regarded as nephritic until proven otherwise. When these findings and symptoms appear later in pregnancy, it is essential that the patient be brought into a hospital in order that proper kidney function tests be performed and the correct diagnosis established. With a thorough study of the patient's past history, the response of her hypertension, albuminuria, edema and symptoms to a ten-days or longer of complete rest in bed and proper diet, together with blood and urine chemical analysis and kidney function tests, one can readily recognize nephritis in over 80 per cent of those suffering from it. In the remaining 20 per cent it may take much longer and more detailed study.

It must be pointed out that a single kidney function test is not of much value; it is necessary to have repeated tests before one can rely implicitly on these tests. A repeated urea clearance of below 50 per cent is almost sure proof of an underlying nephritis.

It must be clear from the foregoing evidence that a complete clinical study of the patient, her response to rest in bed, and a careful study in the hospital of her kidney function, her blood and urine chemistry, her eye ground findings, and her hypertension and albuminuria are essential before a definite diagnosis can be made.

It is the function of prenatal care to detect as early in pregnancy as possible those patients suspected of having a nephritis and thus to enable us to hospitalize such patients for the study essential to an accurate diagnosis. When once the diagnosis of nephritis in any form is firmly established the treatment in the majority of cases should be termination of pregnancy, with avoidance of further pregnancy. By careful and routine examination of the patient throughout pregnancy we can detect early and mild nephritis, and then treat her along the lines indicated, thus adding materially to her span of life.

Eclampsia and Pre-Eclampsia

During the past fifteen years proper prenatal care has reduced remarkably the number of cases of eclampsia and pre-eclampsia. In a statistical study Rice has shown that with the help of adequate ante-natal care the number of eclampsias decreased from 1 in 200 to 1 in 652 deliveries in maternal hospitals. This has been the experience of most hospitals. The frequent routine estimation of the patient's blood pressure, urine analysis, and her general condition leads to an early recognition of pre-eclampsia or impending eclampsia, and so enables the physician to institute means to prevent eclampsia. Under these circumstances, as in nephritis, the patient must be admitted to a hospital as soon as signs or symptoms of a pre-eclampsia appear.

It must be evident that the function of adequate prenatal care is not to differentiate accurately between these three types of toxemia: low kidney, toxemia, and eclampsia (with its forerunner, pre-eclampsia) in the antenatal clinic or in the private office, but its sole purpose is to enable the doctor to know at the earliest possible moment that his patient has a beginning hypertension, an aluminuria, an edema, or some symptom as headache, epigastric pain or visual disturbance, and so enable him either to watch her more closely or to bring her into a hospital for proper study and treatment. In this way, then, good prenatal care makes it possible for the doctor to materially reduce his maternal and fetal mortality.

VITAL STATISTICS: WHY?

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The apparent misconception of the duty of those charged with the accurate and complete reporting of data relative to records of birth, deaths, and disease, as applying to physicians, midwives and parents, and the local and State registrars of such reports, together with the appalling lack of correctness in information given on certificates of birth and death and on reports of morbidity, also the enormous amount of work entailed in an effort to subsequently straighten out his information (being on the receiving end of a mass of incorrect and inaccurate reports of births, deaths and morbidity) prompts me to try to give a few of the personal (to you and me) reasons why physicians should make an effort to arouse themselves from the state of lethargy now prevailing in our mutual relations.

After reference to the works of Pearl and Whipple on the subject of vital statistics, I found that the correct compilation of these statistics, has a much more far reaching effect upon our industrial, economic and social life than a glance would reveal: The following brief definition of the words, by Webster, is short and to the point.

VITAL: Belonging to or contributing to life; important to life; essential.

STATISTICS: Collection of facts and figures regarding the condition of people, class, etc.

WHY: For what cause or reason.

In the early part of the nineteenth century, it became apparent that this country was far behind the countries of Europe in the proper compilation of vital data, and it was becoming more obvious all the time and is now being well recognized that the maintenance of accurate records of vital statistics is a proper governmental function, and that no nation, State or city can be considered as having a complete governmental equipment which does not provide for the proper collection and permanent recording of such statistics.

The national value of such records is reflected in being able to take stock of our vital capital, of the gains and losses by birth and immigration, and by death and emigration, our national wealth being more secure in healthy, happy men, women and children, than in our lands, forests, mines, herds or dollars. The above being accepted as a fact, steps have been taken from time to time to promulgate rules and regulations for the better collecting and recording of our vital data, which brings us to the present day birth, death, marriage and morbidity reports, with which every physician is familiar; every item of information requested on these reports is important in order to bring and keep up to date our national vital bookkeeping, and should be given, so far as possible, earnest consideration.

Accurate birth report information is of local importance because: It is the law of the State that every birth shall be registered; it is necessary to prove age and citizenship; it gives the right to go to school, to start to work, to marry, to inherit property, to hold public office, to secure passport for foreign travel, to secure widow's pension, to enter army or navy, and, in respect of a dependent child, to receive State aid; it enables one to prove right to a definite insurance rate, to prove legitimacy, to enter a profession, to enter the civil service, to make contracts, and to receive pension.

Our neighboring jurisdictions are very persistent in their determination to have every birth reported. (In Pennsylvania if a birth is not reported in ten days an affidavit is required to accompany the certificate, setting forth the reason for the delay).

The general public is becoming more aware of the value of birth registration, and is demanding the certificates. Every month we have numerous requests for records of registration and if these are not already recorded much more trouble is caused the physician. It is easier to report promptly than to delay and later be pestered. If care is exercised in securing the information much time and annoyance will be saved. If, for instance, a report is sent in with a wrong date, the wrong maiden name of mother, or the wrong name of child, it is registered as sent in, and becomes a permanent official record, and the registrar cannot make any changes in the original except when requested over the signature of the reporting party. Legibility is also important in order to save future annoyance.

The morbidity report is another item worthy of consideration, as the efficiency of whatever control measures are recommended depends upon an early report of the disease. This is especially true of typhoid fever, as we all know control steps often prevent many secondary cases of this disease.

PUBLIC WORKS AND PUBLIC HEALTH AN OPPORTUNITY FOR THE MEDICAL PROFESSION

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Dover, Del.

A cursory glance at conditions in Delaware brings out fairly clearly two things; one, that the per capita contribution of taxes to the Federal Government is exceeded by only twelve States in the Union; two, that the State debt per capita is the lowest of any State in the Union.

All of this has occurred despite the notable advances that have been made in highway construction and school construction in this State. In the not far distant future both of these programs, as far as new construction is concerned, will be nearly completed. Since these primary needs of an advanced civilization are being adequately met in this State, and almost completely so within a few years, it would seem that the time has come to reorient the viewpoint of the people of this State along different lines, notably "sanitation" and "housing."

Considerable strides have been made in sanitation over the past ten years in this State, and right now the towns of Harrington and Elsmere are constructing sewerage systems, and also intermittent laying of sewers is occurring in the urban areas just outside of Wilmington.

Most of the unsanitary conditions that come to the attention of the Division of Sanitation are within a radius of about twelve miles from the city of Wilmington, and which might be called the metropolitan area of Wilmington. This is due to the fact that the people moving out from Wilmington want the modern conveniences of water and sewerage facilities but bump up against the problem of taking care of their sewage problems in a soil that is not adapted to cesspools. To relieve this condition the Levy Court had passed a bill permitting them to construct sewerage systems in rural New Castle, to be financed out of county or road taxes in that area, and which was a bill that took the place of a Sanitary District bill advocated by the writer in 1927.

A considerable amount of work has been done, not all of it as well planned as it might be, due to various factors, but the chief deterrent has been the establishment of an assessment of $2.50 per front foot. This is, from a bookkeeping standpoint, an easy solution, but is not a scientific solution of the problem of financing sewerage systems. Our best guide in such practices is to take the experiences of municipalities and sanitary districts which have been established for years in other State. The county law should be amended so that the Levy Court may establish sanitary districts irrespective of political boundaries but determined solely by the natural drainage areas as outlined by the topographical survey. All of the people included in this topographical area, or natural drainage district, have the same interests in public health and sanitation as do the people within the boundaries of an incorporated town or city. If the above assumption is correct, the law should be changed as indicated, giving the Levy Court further power to bond those districts for the cost of sewage treatment plants, outfall sewers, the sewers at the intersections of streets, manholes, and the cost differential between any pipe larger than an 8-inch pipe. These costs which are assumed by a bond issue and could be paid for over a period of time, should be financed as a community, with a direct cost only to the property owner of an 8-inch pipe in front of his property. That is all the individual needs to take care of his sewage, and all of the extra costs over and above that should be borne by the people living in that topographical area. This solution may require a few more bookkeeping entries, but, to my mind, is certainly a much more equitable solution. Why should a citizen living in a topographical area, favored by nature, in which an outlet into a large body of water is available, thus obviating the cost of a sewage treatment plant, be saddled with the same front foot assessment as those citizens living in an area where entirely different conditions prevail? The main argument, as I see it, is that if you can keep the cost of sewers down per property you are going to encourage more connections to the sewerage systems which have been built, and, moreover, the governing unit will have its financial outlay returned in a shorter period.

In addition to the above, since the Levy Court has the power to construct sewerage systems, they should also have the power to enforce connections, the same as any municipal corporation has by ordinance.

The subject of housing has been recognized by the State through the passage of a law at the last Legislature creating a State Housing Commission which has just recently issued its 1934 report, which includes surveys of Dover, Newark, Milford, Georgetown and Laurel. The surveys indicate fairly accurately the conditions prevailing in these towns, although the pride of some of the people who live in the better portion of the towns may be somewhat hurt by the reports. The further development of housing in this State, as I understand it, depends on the encouragement of private capital in this field of investment. It is to be hoped that when such work is done that the power to condemn will be used so that these congested areas will be totally destroyed, converted into playgrounds and parks, and the displaced dwellers settled in far more enjoyable locations. This also has its sanitary aspects, and it should be kept uppermost in every housing project.

A survey of the sanitary conditions throughout the State reveals that practically every sizable community has a satisfactory public water supply and that a considerable amount of construction is now going on in that line. For instance, the Artesian Water Company, a recently organized private company, has extended its operations through Richardson Park, Elsmere, Tuxedo Park, and all of that area lying west of Wilmington; the Wilmington Suburban Water Company, a still more recent creation, is now actively supplying a satisfactory water supply to Bellefonte, Holly Oak, Hillcrest, and as far north as Claymont, which latter area has been receiving Chester city water which is occasion of many complaints, due to odors and tastes in the water, which in turn are due to the prevalence of phenol compounds coming from the oil companies situated on the Delaware.

In addition to the above, Frankford is constructing a water supply system and Selbyville is making arrangements to remove the objectionable carbon dioxide content of its water. There are not many sizable towns left in Delaware in which public water supplies could be built and justified economically.

The same does not apply, however, to several of the towns which are of sufficient size to justify a water-borne system of sewers. This is particularly true of towns such as Middletown, Rehoboth, Georgetown and Milton. Public improvements here might be helped if the State would do some part in granting aid to these various towns. This aid might be in the form of providing the cost of sewage treatment plants on the basis that it will encourage construction work in this State of a permanent value which the citizens can enjoy for generations, and also from the standpoint that irrespective of where a person may live we all have an interest in the maintaining of clean streams in this State. This is not only an aesthetic objection but also, in certain cases, it is objectionable because it does deprive the State of certain natural resources and also deprives a certain number of people of gainful employment. I refer particularly to the pollution of St. Jones Creek by the city of Dover, which affects the oyster beds in the mouth of the creek; to the city of Milford, whose pollution in turn destroys the oyster beds in the Mispillion Creek; and to Lewes and Milton, whose sewage is responsible for the condemnation of the oysters in Broadkill Creek. These are conditions which might be remedied by State aid, and I think could be justified on the above grounds from a State viewpoint.

The city of Dover will probably go ahead on their progress of installing a sewage treatment plant in the next five years, but undoubtedly would begin much earlier with State aid. The problem at Milford is of considerable magnitude, due to the haphazard planning of the sewerage system over a period of years, and for which no one in particular is to blame. The town of Lewes can very readily install a sewage treatment plant, although the agitation for a new inlet into the Canal would probably solve their problem.

In addition to the purely municipal and suburban projects which have been outlined above there is a considerable amount of actual State work that could be done if the State saw fit to appropriate the necessary money. I refer particularly to Stockley Colony, where both a water system for convenience and fire protection is very much needed, as well as a complete sewerage system, as conditions there now are quite primitive compared with the other State institutions. Brandywine Sanatorium is in need of additional sewage treatment facilities, as is also the Colored College located north of Dover, where the sewage from this institution is having only primary treatment in the settling tank, plus chlorination. This should be increased so that secondary treatment on sand filters might be provided and thus the effluent from this, plus chlorination, would be of a quality, at least, equal to the water into which it is being discharged. At the present time the effluent is heavily chlorinated and probably safe, but that does not do away with the aesthetic objection of having the partially treated sewage going into a lake which is used by a considerable number of people in Dover. Added sewage treatment facilities are also needed at the Industrial School for Girls at Claymont.

Another program on which a start has been made in this State, and a very commendable start, is the program for the elimination of mosquitoes. This is not only a problem of the health and comfort of 230,000 people, plus what visitors come into the State, but it is an economic problem also. This is attested by the information unearthed by the Mosquito Control Commission, through the work of Mr. W. S. Corkran, in which definite statements have been made by parties on whose land this work has been done. Many were opposed to this work but have been won over after finding out that their preconceived ideas were mostly prejudices. This information indicates that the production of milk has increased, that more land is available for farming and of good quality soil, and, further, that the production of salt marsh hay has increased. Efforts are being made by the Mosquito Control Commission to find markets for such hay and thus increase its marketable value. The elimination of mosquitoes will more than pay for itself in these various increments of value in addition to the rise in real estate values which will be occasioned by such an improvement. Any money invested by this State will, in the future, be amply repaid, although the bookkeeping which will show this may be a little complicated, as it is difficult to figure in dollars and cents the value of mosquito control work, public highways, or public schools. Many of these benefits which might be classed as intangibles cannot be weighed in terms of grams or ounces, but all add to the enjoy-ment of that period of life on this earth which the Metropolitan Life Insurance Company estimates to be somewhere around 65 years per person and still increasing.

In order to compare the cost of mosquito control work with work that has been done in this State, it might be said that the cost of three miles of concrete highway per year, or the cost of one ten-room school per year, for the period of six years would make the mosquito problem of this State negligible.

To sum up it would seem that there are possibilities looking forward to the next Legislature for some tangible work to be done along the lines of sanitation, housing, and mosquito control work, provided the people of this State, as well as the members of the medical profession, can be aroused to the desirability of such projects. Such tangible improvements will result in more improved housing conditions in this State, better sanitary facilities and will return dividends that are of actual value in health, happiness, and convenience. Undoubtedly the trend throughout the country and the marked emphasis which the Federal departments have put on just these very fundamentals are going to raise the standards of living in this country far beyond any that might result from what we call haphazard individualism.

Certainly democracy does not mean only freedom of speech but means decent living conditions and decent sanitary conditions. Not only will such tangible improvements affect the people of this generation but will also affect the coming generation and will add its quota to bringing up a cleaner and sturdier young America.

I might add in closing an excellent editorial by Mr. Abel Wolman, chief engineer of the State Board of Health of Maryland, chief engineer of the Public Works Act of the State of Maryland, and editor of Municipal Sanitation:

Public Health and Relief Funds

"An observer on Mars would have some difficulty in reconciling the democratic emphasis on "rugged individualism" in the United States with the monarchist emphasis on communal responsibility in England. In our own country we move slowly in the direction of the "debilitating influence of governmental subsidy," even when private initiative, as in housing, has failed miserably to provide a large part of our citizens with decent shelter.

A review of the most recent report of the Ministry of Health of England would startle the strongly individualistic citizen of our democracy. The contrast in policy, with respect to community problems, in this monarchy, across the Atlantic should give us food for thought.

Recent statistical reports in the United States indicate an increase in typhoid fever, essentially of rural distribution. In many instances, its origin is in defective rural water supplies. Extension of well-controlled public facilities into nearby rural areas is not an impossible or fantastic task. Its financial implications, however, run counter to orthodox utility extension policy. We rest, therefore, upon our oars until the areas grow self-supporting!

In generalized health work, some of the areas will never become self-supporting. Shall we there let these people die or shall we be our brothers' keepers?

Last year, the Ministry of Health of England sanctioned about five million dollars in unemployment grants for extending public water supplies into rural areas. In housing subsidies, approximately sixty million dollars were granted to local areas by the Federal Government in one year. Since 1919 it has distributed for similar purposes over three billion dollars.

There, as here, the century-old cry of "paternalism" frequently conceals a prejudice against decent living for the "under-privileged." We must adjust our viewpoints, however, on the necessity of affording each person with minimum standards of health and comfort, even where the only available method is through community financing by the central government."

EDITORIAL

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EVOLUTION AND MEDICINE

One of the charges which for years have been leveled at the medical profession, though possibly more especially at that section of it which engages itself with public health activities, is, that of all whose doings tend to affect human destiny they are most active in endeavoring to disturb nature's way of making those advances which constitute evolutionary progress.

We have on many occasions made use of our medical knowledge and ability in order to save the lives of sub-standard infants, who under nature's plan, would be doomed to perish. We have given our children antitoxin to combat infections and have saved their lives. Nature would have permitted them to contract these diseases, and even, since Rachel wept for her children, might have deemed the loss regrettable. If, however, the child did not die, it was because it had manufactured its own antitoxin, and by reason of having done so, its descendants might be less likely to have it, when they, a score or more years later, became exposed. Thus would be built up racial immunity, an evolutionary possession, vastly superior, the critics state, to that induced by treatment. We are preventing the early deaths of our diabetics, and these are now producing offspring more likely themselves to be diabetics in accordance with accepted Mendelian laws. Nature would have permitted these to die before they had transmitted to others the diabetic tendency. And reprehensible, in all conscience, though our actions have been from the point of view of physical development, when we consider our shortcomings in respect to mental development we ought to be, if we are not, appalled.

The arguments seem unanswerable, nor is it the purpose of this editorial to advance any refutation. The statement that revelation superseded evolution seems specious, flavored by an arrogance perhaps to be expected from one of the lords of creation. But this does not mean that there are no refutations. That eminent exponent of evolutionary practice, the Spartan race, which exposed its weakling infants to perish, was submerged as rapidly and as completely as were others exhibiting a less advanced philosophy though some more humane tendencies. And if, in former stages of development, there were persons who could surpass in almost any line of endeavor some of the present generation they were not very numerous. A William Shakespeare possibly, and a contractor ready to undertake under old conditions the construction of the pyramid at Ghizeh.

It is doubtful if the bravery, endurance and constancy under suffering exhibited by individuals or groups in the World War would not parallel any before experienced at any time or in any place.

If records mean anything the present-day athlete surpasses those of former years. Einstein might not have to take much of Newton's dust. Though Methuselah lived long, he did not appear to have done much, and Turk of modern times has about taken Parr's measurement. Certainly there can be no question insofar as is concerned the length of life of the average individual of today, since in all civilized countries he lives at least twice, possibly three times as long as did most of his forbears.

A Really Serious Situation

For the second time in the past three years the State of Delaware reports an increase in the rate of tuberculosis mortality.

In the year 1931 the rate exceeded that of the former year. In 1932 there was a small improvement in the figure. In the year 1933 there was again an elevation in the rate. In this year (1933) only five States in the entire Union report increases. The Delaware rate is nearly fifty per cent higher than is the rate of the United States as a whole. Only ten States have rates higher than has Delaware.

For the past five years there has been little improvement shown in our tuberculosis losses. Previous to that each year evidenced a decline—often a marked decline—over the figure of the former year, the trend thus satisfactorily dropping. Had the rate of improvement been maintained the Delaware rate would now closely approximate the rate of the registration area of the United States.

Nor is the reporting of the disease in Delaware on a satisfactory basis. There is only about one new case of the disease reported for each annual death. A number of the States report two or three cases. There are only sixteen States in which the ratio is lower than is Delaware's.

The seriousness of the situation arises from the fact that the improvement which was being made has been arrested. Is it because the limit which can be obtained by the methods then used has been reached? It seems so, and that there must be additional effort along a different line before lower figures can be expected. **Is that line not the provision of hospital beds?**

We know there is a crying need in the State for beds at the sanatoria: The lengthy waiting lists prove that. Many cases are removed from the waiting list by death before comes their opportunity of getting treatment. Persons requiring treatment must often wait months before admission. Some who can then be admitted have in the interval so progressed that little or nothing can be done for them, though had hospital treatment been possible when they first came under observation they might have been saved.

And, in the meantime, the infection of the general population is going on from those who ought to be under hospital care, and removed from the possibility of infecting others.

For how long must this condition continue?

At this moment there are probably a thousand cases of the disease in the State. There is hospital accommodation for fewer than two hundred. The remainder are scattered in the homes of the State, where others are being infected, themselves soon to be victims.

What else but this infection in the home can be blamed for the increase of the disease?

American Congress of Physical Therapy—Alfred F. Tyler, M. D., Omaha, President; William L. Clark, M. D., Philadelphia, President-elect; Nathan H. Polmer, M. D., New Orleans, Secretary; John Stanley Coulter, M. D., Chicago, Treasurer; Marion G. Smith, B. S., Executive Secretary. The thirteenth annual session of the American Congress of Physical Therapy will convene at the Bellevue Stratford, Philadelphia, September 10, 11, 12 and 13, 1934. September 14 will be devoted to hospital clinics, detailed announcements of which will be made by printed bulletin not later than September 13. Every member and guest, including the ladies, must register at the registration desk as soon as they enter the convention quarters. Attendants will be present at the entrances of all meeting rooms and admission will be strictly by badge. The official publication is the *Archives of Physical Therapy, X-Ray Radium,* of which Disraeli Kobak, M. D., Chicago, is the editor, and A. R. Hollender, M. D., Chicago, the managing editor.

Menstrual Edema: Preliminary Report

J. Shirley Sweeney, Dallas, Texas (*Journal A. M. A.,* July 28, 1934) records the weight of forty-two normal, healthy young women before, during and after menstruation. Approximately 30 per cent of these women showed a gain of 3 or more pounds sometime during the menstrual cycle, usually just before the period was established. Other cases showed a true pitting edema. This phenomenon may be due to some endocrine disorder or disturbance of the sympathetic nervous system rather than to changes in the blood constituents or to renal insufficiency.

OBITUARY

PETER W. TOMLINSON, M. D.

Dr. Peter W. Tomlinson, one of Wilmington's oldest physicians, died in the Beebe Hospital, Lewes, on July 25, 1934, following a brief attack of pneumonia, at the age of 84 years.

Dr. Tomlinson was born in November, 1849, at Jones Neck, Kent county, on a farm which was formerly owned by the Hon. John Dickinson, of Colonial renown and founder of Dickinson College. He was the son of James and Rachel Saulsbury, nee Wilson, Tomlinson, a descendant of Thomas Tomlinson, of Revolutionary fame, who after serving in the Revolution was elected to the Legislature. His forebears had been agriculturists, and Dr. Tomlinson was the first of his family to follow a profession.

After attending the public schools he attended Jefferson Medical College and was graduated from that college in 1878. After his graduation Dr. Tomlinson went to Milton, Sussex county, where he practiced for five years. While in Milton he was elected to the General Assembly. Also, he married Miss Virginia C. Hazzard, who died several years ago.

On coming to Wilmington Dr. Tomlinson lived at Seventh and West streets, where he built up an extensive practice. A few years ago he removed to Park Place and Van Buren street, where he had an office with his son, and only child, Dr. Robert W. Tomlinson. He retired from active practice in 1930.

During his medical career, Dr. Tomlinson served as both president and secretary of the Medical Society of Delaware. A past president of the State Medical Examining Board, and for years had been medical director of the Continental American Life Insurance Company, he was made medical director emeritus after his retirement.

He was a member of the national, state and county medical societies, of the Masonic fraternity, and until recently a member of the Wilmington Club. He was an active member of Grace M. E. Church.

When he had been practicing for fifty years a dinner was given in his honor by the Medical Society.

His recipe for long life and success was "Moderation in preference to excess, on all occasions." He believed in the good that could be done by a general practitioner, and thought too much specialization harmful.

Funeral services were held on July 27th at St. George's Episcopal Chapel, between Millsboro and Rehoboth. By special request his body was cremated and the Episcopal services were held over the ashes, with Rt. Rev. Philip Cook, bishop of the Episcopal Diocese of Delaware, officiating. Bishop Cook was assisted by Rev. B. M. Johns, D. D., pastor of Grace M. E. Church. Interment was in the adjoining cemetery in St. George's, beside the grave of his wife. Dr. Tomlinson's father and mother are also buried there.

In the death of Dr. Tomlinson the medical profession of Delaware has lost one of its most beloved physicians and one of its noblest characters.

1789—MEDICAL SOCIETY OF DELAWARE—1934

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IMPAIRMENT OF HEPATIC CARBOHYDRATE FUNCTION ESTIMATED BY LEVULOSE AND GALACTOSE*

By Robert W. Tomlinson, M. D.**

Introduction

Prior to inaugurating the experimental work incident to the evaluation of the respective merits of levulose and galactose as integers of hepatic dysfunction, it was necessary to review the literature in English, recounting their employment in such capacity. The various antecedent writers have been quoted freely and verbatim, and to obviate the charge of plagiarism, credit has been accorded to the several experimenters and their work by parenthesised numbers, referring to the appended list of the literature reviewed.

If the effort to present with minutia of detail the conclusions, previously expressed by various investigators, and to record the results accruing from personal research has caused this paper to be unusually long, such has been attributable to a desire to pursue such experiments with an open mind, devoid of any semblance of preconceived bias.

The writer expresses his thanks to Drs. Harry L. Bockus, Joseph Bank, Harry Tumen, and H. N. Metzger, of the staff of the Graduate Hospital for their kindly and esteemed advice; to Messrs. Keller and Burgoon, and the young lady technicians of the Bio-Chemical Laboratories and to the resident physicians and the nursing staff of the Graduate Hospital for their co-operative helpfulness, without whose assistance it would have been more difficult to have attained the results accrued.

The Fate of Ingested Carbohydrate
(Peters and Vanslyke) (22).

I. Behavior of different carbohydrates in the alimentary canal

Of the carbohydrates of the usual foods, some are celluloses and pentosans entirely incapable of absorption, others are polysaccharides capable of hydrolysis by the digestive processes into monosaccharides that can be absorbed, while others are already monosaccharides capable of absorption without hydrolysis.

The assimilable polysaccharides, starch, glycogen of meat, lactose of milk, sucrose and maltose, are all rapidly hydrolyzed by the various digestive enzymes to their constituent monosaccharides, which are then absorbed into the portal circulation. Glucose constitutes a large portion of the monosaccharides; all that formed from starch, glycogen and maltose, and half that from sucrose and lactose. The remainders of the latter two disaccharides consist of fructose and galactose respectively.

It was at one time believed that all sugars were converted into glucose in the course of their passage from the intestine to the portal circulation. It is now known that monosaccharides of all kinds are absorbed as such into the blood stream and are only converted to glucose after they have reached the liver.

The amount of sugar or the concentration in which it was given affected only the duration, not the rate of absorption. Monosaccharides are absorbed into the blood stream without transformation. After their ingestion, therefore, unless they are immediately removed from the blood stream, they will be found in the circulating blood. As reducing agents, all will react to the tests usually employed for the estimation of glucose in the blood. The only differences in reactions to alimentary and parenteral administration of such sugars depend on, (1) the limited rate at which they can be absorbed from the intestines, and (2) the fact that sugar absorbed from the gut must traverse the liver before it gains access to the systemic circulation.

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*From the Gastrointestinal Service of Dr. H. L. Bockus, Graduate Hospital, Philadelphia, Pennsylvania.

**Thesis submitted to the Faculty of Internal Medicine of the Graduate School of Medicine of the University of Pennsylvania in partial fulfillment of the requirements for the degree of Master of Medical Science (M. Sc. (Med.)) for graduate work in Gastroenterology.

The appearance of melituria (sugar in the urine) following the ingestion or injection of monosaccharides cannot be interpreted as glycosuria (glucose in the urine) unless some method more specific than the ordinary reduction techniques is employed for its identification, unless it be assumed that the kidney is impervious to sugars, other than glucose, which it is not.

II. Removal of monosaccharides from the blood stream by simple absorption and diffusion

The injection or the absorption from the alimentary tract into the blood stream of any monosaccharide is followed for a variable interval by an increase in the concentration of sugar in the circulation. The quantity of extra sugar, which thus appears in the blood stream, must depend on the rate of administration of the sugar and the speed with which it is removed from the blood. The nature of the extra sugar is, at least at first, identical with that of the monosaccharide given and, unless the latter is glucose, qualitatively distinguished from the normal blood sugar.

The height to which the blood sugar rises must depend on the nature as well as the quantity of sugar ingested or injected. Of the three common monosaccharides, galactose causes the greatest blood sugar rise, fructose much less than galactose. This is at least partly to be ascribed to the fact that galactose is the most and fructose the least rapidly absorbed from the alimentary tract.

III. The conversion of carbohydrate to glycogen

In the normal individual, at least, retention of sugars in the tissues as monosaccharide is a minor and temporary process. Most of the sugar removed from the blood is very rapidly converted into glycogen in the liver or tissues or oxidized in the latter.

Of the various sugars or sugar-forming substances, Mann found that only glucose, maltose and glycogen (the last two polymers of glucose) could be utilized freely by the liverless animal. All other monosaccharides and compounds must, apparently, undergo transformation by the liver before they can be oxidized or converted into glycogen in the tissues. This preparatory process consists of conversion to glucose, probably through the intermediary stage of glycogen. Certainly the usual path of levulose metabolism leads through liver glycogen formation. The evidence indicates that levulose requires transformation to glycogen before it can be utilized and that this transformation is most readily effected in the liver, although it may occur to some extent in the muscles.

The speed with which different sugars can be utilized after they enter the blood stream depends on the amount of preliminary transformation which they must undergo. Glucose is the most rapidly removed from the blood stream, because it can be taken up and used by both tissues and liver. Of the other two common sugars, levulose can apparently be converted to glycogen more rapidly by the liver than galactose.

Although only glucose and its polymers can contribute directly to the glycogen stores of the tissues or to the glucose content of the blood, all glucose forming substances may, after transformation by the liver to glycogen and subsequent hydrolysis to glucose, produce hyperglycemia. There exists between liver glycogen, blood sugar and muscle glycogen, a continuous interchange governed in accordance with the resources and needs of the body. If, therefore, of some sugar other than glucose, more is taken than can be immediately retained in the liver as glycogen, the excess is converted to glucose, poured into the circulation and carried in the blood to the tissues, where it is removed for combustion or storage. The mere presence of levulose in the blood stream does not alleviate hypoglycemic shock. Nevertheless, insulin hypoglycemia may be prevented or abolished by the administration of levulose, because this increases the supply of liver glycogen, which may be called upon to provide blood glucose.

IV. Glycogen

To Claude Bernard physiology owes the discovery of glycogen or animal starch, and its function as a form of stored energy.

V. Glycogen as a storage carbohydrate

Glycogen is non-diffusible through membranes and, like other colloids, has a negligible osmotic pressure. It, therefore, constitutes a form of carbohydrate, which can be localized in the cells in large amounts without causing them to burst by osmotic pressure. Glucose is the form of carbohydrate used for transportation, and perhaps, for immediate combustion. All of the free glucose in the body, however, might be burned by fifteen minutes of vigorous exercise, were it not renewable from the glycogen stores.

Studies of carbohydrate metabolism in man are, of necessity, based either on determinations of the carbohydrate combustion, as shown by the gas exchange, or upon glucose analyses. Clinical analyses of the quantitatively important glycogen are prevented by its inaccessible location in the tissues. Nevertheless, the intimate relationship between tissue glycogen and glucose have been sufficiently clarified by animal experiment to assist in explaining some of the multifarious variations of blood sugar. Without a knowledge of these relationships it would, in fact, be impossible to understand the behavior of the blood sugar.

VI. Distribution of Glycogen

Glycogen is the main carbohydrate of the tissues, as glucose is of the blood. Under ordinary conditions, the body probably contains ten times as much glycogen as glucose. Glycogen is found in all cellular tissues, but is most abundant in the liver, where it varies extraordinarily with the state of nutrition of the body. The liver glycogen appears to serve as a readily available reserve food for the entire body; a full supply can be piled up in a few hours in time of plenty, and in time of need can be used up with equal speed.

The muscle glycogen fluctuates with the state of nutrition, but not so hugely as the liver glycogen.

Sources of Glycogen Formation

Glycogen is apparently formed in situ in each tissue. The material for its construction is absorbed by the tissue from the blood. As has been already pointed out, glycogen may be formed in the liver from glucose, other sugars, or even other substances, like protein, which are capable of conversion to carbohydrate. Other tissues can form glycogen only from glucose, which may be derived from the food, from hydrolyzed liver glycogen, or from lactic acid. Both the rate and mechanism of glycogen formation vary with the nature of the material from which it is formed.

VII. Rate of Glycogen Formation

The different sugars vary in their power to form glycogen when they are orally administered. Thus Murschhauser found that, if the increase in liver glycogen caused in eight hours by feeding 50 gm. of glucose to dogs was rated as 100, the other sugars ranked relatively as follows: levulose, 65; sucrose, 58; maltose, 16; galactose, 13; lactose, 6. This is a variance with Cori, who found far more glycogen in the livers of rats four hours after feeding fructose, than he did after glucose. On the other hand, the total amount of glycogen formed in the body was the same after either sugar. The same glycogen is formed from all these sugars. The different rates at which sugars, after ingestion, form glycogen are doubtless in part due to variations in the rates of absorption, in part to variations in rate and mode of utilization after absorption. If sugar is absorbed slowly, combustion can keep pace more nearly with absorption, a large fraction of the absorbed sugar can be burned "pari passu." and a smaller fraction remains to be stored as glycogen. However, the variation in mode of utilization after absorption appears to be an equally important factor in determining glycogen formation. Cori found that galactose was absorbed more rapidly than glucose, yet galactose feeding causes much slower glycogen formation; a larger portion of galactose must be burned or turned to fat. Fructose is more slowly absorbed than glucose, but unlike the latter, cannot be utilized by the tissues until it has first been converted. This may explain why, in Cori's experiments, the proportion of the total body glycogen found in the liver was greater after fructose than after galactose.

VIII. Possible role of glycogen as obligatory intermediate step in glucose combustion

It is compatible with the facts known that even the fraction of absorbed glucose which is burned at once passes through glycogen as an intermediate step preceding combustion. If glucose combustion could be observed in an animal with glycogen free muscles, we should have a positive answer to the question whether glycogen formation is a necessary intermediate step.

IX. Summary of facts concerning metabolic role of glycogen

Glycogen is the carbohydrate into which absorbed sugar is immediately transformed in the tissues for storage as a reserve food. The liver is distinguished by its ability to store relatively great amounts of glycogen, which can be later broken down to glucose to maintain sugar content of the blood and to supply other tissues with energy. It is also the only organ that can form glycogen from other material than glucose or polymers of glucose. The other tissues can form glycogen from glucose and store it, but can return it to the blood only as lactic acid, which cannot be reconverted to glucose in the absence of the liver. Injuries which prevent the combustion of carbohydrate tend to deplete liver glycogen. Glycogen formation may be an essential step in carbohydrate combustion.

X. The normal sugar concentration in Venous and Capillary Blood during the post-absorptive period

The concentration of sugar in either venous or capillary blood of healthy individuals, studied before breakfast after a fast of twelve to sixteen hours, usually falls within the limits, 70 to 120 mg. per 100 cc.

XI. Diseases of the liver and gall bladder

In diseases of the gall bladder and in various pathologic conditions of the liver, excessive alimentary hyperglycemia occurs with considerable frequency.

Leclity and Woods have presented some cases in which operative relief of the gall bladder disease has been followed by restoration of sugar tolerance. It has been demonstrated that moderate liver injury raises blood sugar, indicating a loss of glycogenic function and reduction of the glycogen stores of the liver.

Because glucose tolerance tests have given such uncertain information concerning liver function in disease, other sugars have been substituted, especially levulose. It is claimed by many observers that the tolerance for levulose is more frequently diminished by liver disease than is that for glucose. The experience of Cori that levulose, when injected into the mesenteric vein, can be utilized twice as fast as when injected into a peripheral vein, yields some support to this claim. But since the muscles also are shown by Mann to form glycogen from levulose, complete loss of the liver glycogenic function would presumably only decrease, not abolish, ability to utilize this sugar; and study of the quantitative effects of partial liver destruction is necessary before the clinical value of the levulose tolerance test can be established.

Extractions From a Review of the Literature

As early as 1874, Bock and Hoffman indicated the importance of the carbohydrate function of the liver. These investigators found a diminution of the blood sugar after the liver had been removed or shunted from the circulation. It remained for Mann and his co-workers to establish the importance of this function of the liver. They found that immediately after the removal of the liver, the blood sugar decreases progressively; when it reaches a certain rather definite limit, of from 0.06 to 0.04%, a characteristic group of symptoms appears and, if allowed to continue, death soon ensues, and showed that these phenomena could be controlled by the injection of dextrose, and that the duration of control, within certain limits, depended on the amount of dextrose administered, and definitely stated that the removal of the liver completely severs a part of the vital normal process of carbohydrate metabolism. (4).

It is readily seen from a brief review of the literature that investigations of the use of sugars in testing liver function were productive of widely variant results and equally divergent interpretations. However, the fact seems to have been, that "nature," in providing for so vital a faculty, has characteristically created an organ with adequate reserve. Then, too, little consideration was given the remarkable power of regeneration of the liver cells, as a result of which, in chronic damage of these cells, one may see cellular regeneration and degeneration proceeding simultaneously. It is because of these two properties, adequate reserve and a strong tendency to regeneration, that in cases of slow or local disease of liver cells, there is sufficient actively functioning liver tissue, to maintain the carbohydrate mechanism. From these considerations, it becomes obvious, that one should expect changes in the carbohydrate function of the liver, only when all or nearly all of the liver cells are damaged more or less acutely, or when chronic damage of these cells has progressed extensively and regeneration has failed. This contention is strengthened by Roubitschek, who found marked galactosuria, but in those cases in which, despite additional poisoning by phosphorous, there was a recession of the galactosuria, post-mortem examination revealed regeneration of the liver cells. These facts, then, of adequate hepatic reserve and ready hepatic regeneration, aid in the clarification of the variable results that have attended the efforts to utilize the carbohydrate function as a routine test of liver function. (4).

Claude Bernard discovered the glycogenic function of the liver in 1857. In 1899 Sachs demonstrated that 90% of cases of liver disease showed levulosuria, whereas 90% of normals did not. Positive cases showed levulose in the urine within one hour after administration of the sugar. Strauss in 1901 first suggested the utilization of this function as a test of hepatic disease. Since the original paper much has been written concerning this test, but the majority of observers agree, that in its original form, the test is unreliable. (1-2). Shirokaeur was the first to substitute the estimation of the blood sugar in place of urinary sugar. This observer noted that there was little or no rise in the blood sugar content in a normal person, one hour after the administration of 100 gm. of levulose. If, however, the liver was damaged, the rise was marked—even up to 190 mg. per 100 cc, or if the rise above the first value was over 30 mg., a degree of hepatic inefficiency was indicated. (1-2).

A study has been made of the action of hydrazine and certain of its derivatives in producing liver injury, and the levulose tolerance test was employed in determining the degree of liver involvement, and this method has been found to be very useful, as shown by the corroborative evidence adduced on gross and microscopic post-mortem examination of the tissues of the experimental animals. (3).

"Holweg" (2) found that obstruction of the common duct by a gall stone may give rise to a positive levulose tolerance test; whereas, the obstruction of a tumor does not, even if the obstruction in the latter case becomes quite complete. Evidently the blocking of the duct which comes on gradually or irregularly, does not overpower the liver cells; so, a common duct stone, may or may not give rise to an associated hepatitis and consequent alteration of glycogenic function, and it is not primarily in obstructive jaundice that we anticipate a positive levulose test. (2).

In 1906 Baeur suggested that galactosuria, following the ingestion of galactose, might be used as a liver function test. (2).

The unreliability of the urine test in the case of levulose was shown by Lansberg in 1903, Churchman in 1912, and Woerner and Reiss in 1914. Churchman found levulosuria absent in a number of cases of liver disease, and present in a number of normals. (2).

Comparative studies of blood sugar curves on normal individuals after the ingestion of glucose, lactose and levulose, showed that the levulose produced no rise at all. (2).

Bodansky, in 1923, found that levulose produced little hyperglycemia and gave an accurate index of liver dysfunction, performing the test before chloroform poisoning, at the height of the poisoning, and during the recovery of those animals less severely poisoned. The tolerance after chloroform poisoning returned to normal within six to fourteen days; in those animals which died, fatty degeneration and necrosis of the liver cells was demonstrated histologically. One animal subjected to chronic alcohol poisoning, showed by the liver test, moderate hepatic insufficiency. (2).

Greene, Snell, Walters, McVicar and Rowntree, in a series of papers in 1925, criticized the levulose tolerance test, because it is inconstantly present in obstructive jaundice and malignancy of the liver, and because of the difficulty in ruling out associated pancreatic disease. Experimentally, they found the test positive in a high percentage of dogs after ligation of the common duct, but obstruction of such cannot interfere with the glycogenic function of the liver, but the retention of the bile may result in injury to the liver cells. Clinically, biliary obstruction is seldom strictly comparable with experimental ligation. It is probably in only a small percentage of clinical cases, that the liver cells receive the sudden shock which comes from sudden and total ligation. (2).

There has been a great deal of investigation recently regarding hepatic function and the various tests to determine it, the importance of which is quite obvious to the Clinician and Surgeon. They aid materially in the diagnosis of hepatic disease, and also in determining the prognosis previous to Surgical procedures. It is essential to know the changes which have taken place in the liver before surgery of the gall bladder and its duct is attempted. The liver plays an important part in the general nutrition of the body. Its functions are manifold, but for the most part they depend on the properties of the liver cells, which constitute the anatomical and physiological unit of the organ. (5).

The blood sugar level depends on the relative rate at which sugar enters and leaves the blood stream. Maintenance of a constant blood sugar concentration, requires an in and out flow of sugar, of equal magnitude. When this equilibrium is disturbed the blood sugar may either rise or fall, depending on the preponderance of the processes which contribute to or cause a withdrawal of sugar from the blood. It is now generally accepted, that a rise in blood sugar, elicits a secretion of "insulin," and that a fall in blood sugar, below a certain level, is followed by a discharge of epinephrine. Two processes contribute sugar to the blood; namely, absorption of carbohydrate from the alimentary canal, and sugar formation in the liver (from glycogen and other sources). The disappearance of the blood sugar depends on its oxidation in the tissues, and upon its conversion into glycogen and fat. (7).

Glycogenolysis in the Liver

Under post absorptive conditions the organism depends on the liver for the supply of blood sugar, as is shown by the fact that removal of this organ causes hypoglycemia (Mann and McGath). Though the muscles generally contain a store of glycogen, which is at least equal to that in the liver, they are unable to contribute glucose to the blood. Since the blood sugar remains constant under normal post absorptive conditions, in spite of fluctuations in the rate of its utilization in the tissues, sugar production in the liver must be capable of very fine and rapid adjustment. The liver is able to convert a large variety of substances into glucose; in most cases this, probably, does not occur directly, but involves intermediary glycogen formation. The final step in the process of sugar formation in the liver consists, therefore, in the enzymatic hydrolysis of glycogen. Among the various factors influencing the rate of sugar formation in the liver, Insulin and Epinephrine are of chief interest. (7).

The Inhibiting Influence of Insulin

Hedon and Geraud showed that increased glycogenolysis sets in as soon as the supply of insulin is stopped. Determinations of the sugar concentration in, the in and outgoing blood of the liver, before and after insulin injections, showed that less sugar is liberated by the liver during hypoglycemia, than at a normal sugar level, and the experimental evidence so far presented, is consistent with the view, that insulin acts as an inhibitor of the glycogenic process in the liver. In well-nourished animals with high liver glycogen, if the hypoglycemia persists for some time, insulin causes a fall in liver glycogen. The decrease in liver glycogen after insulin injection, is generally associated with hypoglycemia, and there is reason for believing, that the latter is a powerful stimulant to glycogenolysis, and the fall in glycogen would. therefore, not be caused by insulin, but would be of the nature of a secondary phenomenon.

When insulin is lacking, the enzymatic hydrolysis of liver glycogen remains unchecked, leading to the disappearance of liver glycogen, and illustrating that a continuous supply of insulin, by the pancreas, is therefore essential for the preservation of hepatic glycogen, whereas one of the functions of insulin in the body is an inhibition of sugar formation in the liver. Epinephrine has the opposite effect, the injection causing a decrease in liver glycogen and an increase in blood sugar. The decrease in liver glycogen in the beginning of "epinephrine" action indicates that glycogenolysis is proceeding more rapidly than new formation of liver glycogen (from blood lactic acid), but, in later periods of epinephrine action, the reverse takes place, the rate of new formation exceeding the rate of mobilization, the end result being an increase in liver glycogen above the original level.

The presence of both glycogen and glycogenase in the same cell, makes it necessary to assume that a large part of the enzyme is unable to act on the sub-strate, otherwise the glycogen would quickly disappear from the liver. That the glycogenase can be considered more active than under "in vivo" conditions is shown by the rapidity of glycogenolysis. The enzyme may be relatively inactive in the intact liver because it requires an activator or because it is blocked by an inhibitory substance, or the enzyme may be absorbed on some structures in the cell and thus be removed from the sphere of action. The largest part of the glycogenolytic enzyme is absorbed. and only a small fraction is free, and, therefore, in an active state in the liver of a normal animal, whilst the opposite is the case in the liver of a diabetic animal. Insulin, either directly or indirectly, would cause a reabsorption of the enzyme and thus diminish sugar production in the liver; while epinephrine would increase sugar formation, by liberating part of the bound enzyme. (7).

Glycogen Formation in the Liver

When food containing carbohydrate is taken, glycogen is deposited in the liver, but even with a diet practically free of carbohydrate the glycogen stores of the liver are not depleted. This is due to the fact that a variety of non-carbohydrate substances can serve the liver as material for glycogen formation. (7).

The feeding of fructose gives substantially the same results as those obtained with glucose, if it is true that fructose is converted into glucose in the liver, and normally never gets beyond that organ, this assumption being based on the fact, that neither normal nor diabetic urines contain fructose when large quantities of such or of cane sugar are taken, and the fructose test for a much-reduced efficiency on the part of the liver rests on such assumption. Since fructose has nowhere near the same effect as has glucose in raising the level of the blood sugar, one is forced to assume that the transformation of fructose into glycogen within the liver is accomplished much more easily and, therefore, more completely. (8).

In 1921 McLean and de Wesselow studied blood sugar curves of normal adults and those of diabetics after the injection of various sugars, such as glucose, levulose, saccharose and galactose, etc. All these sugars, except levulose, provoked a rise in blood sugar. As little as twenty-five gm. of these sugars provoked a maximal rise. Larger doses were incapable of increasing the level, merely tending to prolong the time during which this level was maintained. Levulose on the contrary had no effect on the blood sugar in persons with normal livers.

Spence and Brett, later found the ingestion of fifty gm. of levulose will show no rise in blood sugar. More than fifty gm. may cause an alimentary levulosuria, because even a normal liver has a limit of storage, and all levulose above this limit will be spilt over into the blood and excreted by the kidneys. The rationale of this test, therefore, depends upon the fact that the normal liver is able to convert and store fifty gm. of levulose given at one time. If the liver is in any way damaged, the entire amount would not be taken up by its cells, and some levulose would appear in the blood. (9).

When levulose is given by the mouth it is found a considerable dose can be tolerated without giving rise to a recognizable increase in the blood sugar. All of the levulose which is absorbed from the intestine, must first pass through the portal system to the liver, before it can gain entrance to the systemic circulation. The natural interpretation of these facts is, that the liver has the power of building up and storing levulose. In fact, as Sir Humphrey Rolleston has noted, levulose is the only carbohydrate, of which the metabolism cannot be carried on elsewhere in the body, than in the liver. It may be stated in brief, therefore, that normally there is little or no rise in the blood sugar curve following the ingestion of a given amount of levulose. The sequence of events is far different, however, in the case of gross liver disease whether due to degeneration, atrophy, inflammation or new growth. In these circumstances, the liver cells are either partly destroyed or rendered individually less capable of function. They are, therefore, unable to deal efficiently with the levulose after it is absorbed from the intestine. Consequently the sugar evades polymerization and escapes from the portal into the systemic circulation, there giving rise to a marked increase in the blood sugar content, the extent and duration of which may be regarded as indicative of the degree of liver damage.

It is clear that three factors, apart from the activity of the liver, will tend to influence the height obtained by this blood sugar curve.

I. In the first place the rate of absorption from the gut must be considered. In cases where chronic inflammation or atrophy of the mucous surfaces is present, the rate of absorption will be correspondingly slow, and the concentration of levulose in the blood, at any given time, will be relatively lower than in cases with healthy mucous membrane.

II. The pancreas has a very intimate connection with certain stages in the metabolism of sugars in the animal body; clearly, then an anomalous result might be obtained by exhibiting levulose in a case of pancreatic deficiency. This possibility must be excluded, if need be, by separately determining the glucose tolerance, and by finding in the urine a diastase content of over fifty units (Davies). A reaction to levulose can only be taken as abnormal, if there is no evidence pointing to pancreatic disorder.

III. The rate of elimination of the sugar from the blood must have a definite reaction upon the height of the levulose curve. Elimination is mainly effected by the kidneys, and in some cases is much more rapid than in others. In passing, it may be noted that the threshold for levulose is considerably lower than that for glucose. Levulose can be detected in the urine after quite small degrees of rise above the fasting level of blood sugar.

However scant our knowledge of the normal fructose metabolism may be, it is certain that the greater part of the fructose which the liver gets from the intestine is stored in that organ as glycogen, and that a smaller part passes over into the blood stream from which it disappears rapidly. We also know that a part of the fructose is at once oxidized. This oxidation process is manifested by a rapid increase in the excretion of CO_2, together with a rise of the respiratory quotient, a phenomenon repeatedly observed. When the function of the liver is intact, a partial decrease in tolerance to fructose is never met. (12).

Worner and Reiss carried out experiments on alimentary galactosuria and levulosuria, and came to the conclusion, in regard to the latter, that its value as a test for liver disease could only be accepted if more than 0.1 gm. was found in the urine, and even then, the interpretation of the result needed caution.

In 1913 Shirokaeur, after giving one hundred gm. of levulose, found the rise in the blood sugar of normal individuals to show a marked difference from that following a dose of glucose. Instead of a value of 0.15 or so being obtained, only the slightest rise in blood sugar value was noted. In the subjects of liver diseases, however, the rise was marked, values up to 0.19 being observed. At the same time he found levulose in the urine in the majority of cases, though this did not of necessity, show a parallel with the rise in blood sugar values.

Isaac conducted a series of experiments regarding the position of fructose in carbohydrate metabolism, not only confirming the fact that fructose, as compared with glucose, caused no appreciable rise in the blood sugar content, but claims to have estimated the relative amounts of levulose and dextrose in the blood after the oral administration of one hundred gm. of levulose. He found in samples of blood taken from normal persons half an hour, and in other cases one hour after administration of this sugar, that dextrose formed by far the greater portion of the total blood sugar content, and that levulose soon disappeared entirely. In cases exhibiting hepatic diseases, on the contrary, not only did the blood sugar content rise to a much greater extent, but the proportion of levulose actually present in the blood sugar was far greater and persisted longer.

This test is dependent on the fact that levulose is unable to cause a rise in blood sugar such as takes place after a dose of glucose. That the liver is concerned in this must be accepted, if the test is to be relied upon, as one for hepatic function.

Glucose is known not to be assimilated and stored as quickly as levulose. Even in a healthy person, its increase in the general circulation is observed by following the blood sugar curve over a period of one and a half hours. Winter and Smith have claimed to show that the form in which it circulates is Y glucose, this being derived from a common enolic form. The production of Y glucose is essential before assimilation can take place. Since fructose is more easily converted into this enolic form than glucose, it is reasonable to suggest, that the conversion and subsequent storage of fructose takes place more rapidly than in the case of glucose. Consequently, levulose does not appear in the circulation to the same extent as glucose, immediately following its ingestion. If, however, a pathological condition of the liver exists, then the enzyme or substance causing this conversion may be less active or so delayed in its action that the fructose, instead of undergoing a rapid conversion into glycogen, as is usually the case, circulates in the blood and gives rise to the blood sugar curve observed in pathological conditions of the liver. (15).

Mann and Magath found that complete removal of the liver prevented additions of glucose to the blood from other parts of the body. Unless glucose, or some other substance easily convertible to glucose, such as glycogen, starch, maltose and so forth, was administered to the animal without a liver, the blood glucose gradually lessened and symptoms of hypoglycemia ensued. Administration of substances convertible to glucose prevented symptoms of hypoglycemia and increased the glucose content of the blood.

With fructose it was demonstrated that in the absence of the liver, its administration prevented symptoms of hypoglycemia and increased the glucose content of the blood. This appears to be direct evidence that tissues other than the liver are able to effect this transformation. From a quantitative standpoint, about the same percentage of administered levulose disappeared and was converted to glucose, whether the liver was present or not. If both liver and intestines were absent, no conversion of fructose to glucose occurred, symptoms of hypoglycemia developed, and large amounts of fructose could be recovered unchanged in the urine. If only the intestines were removed, the liver being present, fructose was converted into glucose. It would appear that fructose may be converted to glucose by the liver or by the intestines, but not by the other tissues of the body.

The observations of Hughes and Malik (1930) on a number of hospital patients in Lahore (India) showed that the levulose tolerance test was positive in most of them, though there was no clinical evidence of hepatic disease. They suggested that the diminished tolerance for levulose in these patients was the result of defective formation and storage of glycogen in the liver, probably due to previous attacks of malaria, from which they had suffered.

Our results show that the levulose tolerance test gave positive results in a greater number of cases with liver disease than in those without evidence of hepatic disorder. Moreover, while a positive test is more in favor of hepatic dysfunction, a negative test cannot exclude liver disease, especially in chronic cases. Clinical evidence of disease of the liver is generally present by the time the levulose tolerance test gives positive results, and the test then is more confirmatory, rather than an aid in diagnosis. Tests of this type depending on the partial function of the liver, in the regulation of the blood sugar level, "do not permit of an exact quantitative estimate of the degree of impairment or liver function" (De Wesselow 1924). (20).

There is a vast difference between one-fifth of a healthy liver and an entire liver, all of which is diseased, however mild that disease may be. Compare a case of embolic nephritis with a case of acute hemorrhagic nephritis. Similarly, a toxic heptatitis generally involves all of the parenchyma of the liver, and a chronic heptatitis continues to involve the entire parenchyma, whether it be made of new grown cells or old. Even if such involvement were slight, the function of the involved cells could hardly be expected to equal that of a small but normal group of cells. Mild and chronic forms of hepatitis or hepatic insufficiency do exist, and they are quantitatively measurable by the levulose test. (2).

Joliffe concluded, "that the height of the rise following the ingestion of sugar is in inverse proportion to the level of the fasting blood sugar, and that there must be a ceiling level, which is constant, whatever the fasting level, which when reached, stimulates a subsequent fall, and that the fasting level must be considered before declaring any rise in mg. to be an abnormal one." He believes that the ability of various sugars to produce hyperglycemia varies directly with the rate of absorption and inversely with the ability to form glycogen and the ease of being oxidized. Levulose is absorbed slowly, but being a good glycogen former and readily oxidized, causes only a slight rise in blood sugar, "the rise is in inverse ratio to the fasting level (the lower the fasting level, the higher the rise), and attributes the regulation of the blood sugar level to its concentration, and in line with Pollack's assertion that the blood sugar level regulates the metabolism of carbohydrates, an idea quite in line with the cause and effect of insulin secretion cited by Cori."

The active agent of this sugar storage mechanism is insulin, and it has been shown with crystalline insulin there is a latent period of ten to fifteen minutes, which elapses after injection of insulin, before the blood sugar begins to fall. Thus it is probable, that in the normal body an interval of ten or fifteen minutes elapses, after the excitatory ceiling has been reached, before the sugar storage mechanism begins to effect a significant fall in the blood sugar level, and during such interval, in a tolerance test, sugar is being constantly absorbed. Cori and Cori have shown that a single sugar is absorbed at a constant rate from the intestine regardless of its concentration and that this absorption has no relation to insulin. Since the carbohydrate storage mechanism is latent, this absorbed sugar accumulates in the blood. The more rapidly absorbed sugar may be expected therefore, to raise the blood sugar well above the ceiling level.

Sachs and Blumenthal, and more recently Mann, Magath, Bollman, Ringold and Karr, Ludhardt and Koppany, have found that levulose was absorbed almost specifically by the liver, and according to McLeod, a diabetic liver can convert levulose into glycogen, which then becomes available as glucose to the organism. Wierzuchowski and Cori have shown that action of insulin though markedly affecting the tolerance to glucose, will not, in any way, alter the tolerance to levulose (rather large quantities) administered by intravenous injection. As Cori has shown, insulin action is chiefly concerned with peripheral metabolism (increased oxidation and the formation of glycogen in muscle), whereas levulose is primarily subject to the liver, enunciated as primarily, for he has also shown that under certain conditions, the tissues can utilize levulose.

To summarize, it is plain that levulose may be metabolized outside the liver and it is equally evident that the liver rapidly and efficiently utilizes a large proportion of the levulose, which comes to it having an extraordinary affinity for levulose, and being further assisted by the fact that levulose is absorbed at but half the rate of glucose, and any levulose which does get through the liver will then be in the systemic circulation, and the S shaped curve for levulose utilization by the liver demonstrates that there is a delay before the liver begins to store sugar, thus affording opportunity early in the absorption period for levulose to get through the liver into the systemic circulation and it is presumably this sugar which causes the rise during the levulose tolerance test. If the liver were damaged, still more would pass through and the level would be raised further to the point of giving a positive test. Any metabolism which may go on in the tissues would remove sugar from the blood, and not add to it, it having been conclusively shown (Mann, Cori), that only absorbed sugar and liver glycogen can serve as sources of sugar in the blood, never muscle glycogen. Of the three major influences known to affect the deposition of glycogen in the liver, configuration of the sugar molecule is certainly the most important and the rise of blood sugar in animals after the injection of galactose is much higher than after levulose, yet but little glycogen is deposited in the liver. The rate of absorption undoubtedly helps to determine the height of the blood sugar. In the case of levulose, all values are usually within the normal range, and the slow absorption plus the special affinity of liver tissue for levulose, must be the chief factors involved.

TECHNIQUE AND METHODS EMPLOYED

Shirokauer and Isaac employed doses of one hundred gm. of levulose and other workers have used up to 50 gm. Spence, Brett and Tallerman varied the dosage according to the body weight, but the latter pointed out that because his results were strictly comparable with those using doses of one hundred gm., he could see no reason for not employing a constant dose of forty-five gm. and his opinion has been accepted. Scharff made a study of the effect of different doses and decided that increased doses did increase the height of the curve, but why this should be so, is difficult to see, as Cori and Cori have shown that absorption of levulose, as of any single sugar, continues at a constant rate regardless of the concentration, and increased doses merely prolong the absorption period and the most plausible explanation is a difference in behavior between animals and man, such as has been shown to exist in the case of galactose.

Study of the values quoted from Spence and Brett and Tallerman show that the first and second hour samples indicate the full extent of the curve, though missing a slightly higher rise in the first one-half hour. The one-hour sample seems the more reliable, as variations in gastric emptying and intestinal absorption may affect the height of the one-half hour level.

VARIOUS STANDARDS OF NORMALITY

The chief conceptions in the literature, concerning the limits of normal tolerance to levulose have been presented, and liver damage has been presumed under the following conditions:

I. Rise of over ten (10) mg. per cent above the fasting level, with failure to return to the fasting level by the end of the second hour (Spence and Brett on a basis of five (5) cases).

II. Rise of over thirty (30) mg. per cent above the fasting level and to a level of over 0.135%, also persistence of a high level at the end of one and a half (1.5) to two (2) hours. (Tallerman on the basis of fifteen (15) cases).

III. Rise to a level of over 0.125% (Joliffe on the basis of eighty-one (81) cases).

Elmer and Scheps believe the highest rise in normals to be 20 mg. per cent above the fasting level. (2).

I. In normal subjects the maximum blood sugar following administration of thirty (30) to fifty (50) mg. (based on body weight) of levulose, by mouth, rarely exceeds 115 mg. per cent.

II. A rise in blood sugar to 125 mg. per cent or over, should be considered an abnormal response to the oral administration of levulose.

I. A blood sugar value of 0.12 to 0.13% after a dose of levulose is not in itself evidence of a pathological condition. If, however, the height of the curve exceeds 0.135%, and the actual rise in the value from the original level exceeds 30 mg. a degree of liver inadequacy is presumed. The prolongation of the curve, a high blood sugar level persisting at the end of 1.5 to 2 hours, is strong evidence of such disorder.

II. Dosage, according to weight appears to be a questionable factor in the test. 45 gm. of levulose seems to be satisfactory as a routine dose.

III. The renal threshold for levulose is normally far lower than is the case with glucose, and can be placed at a blood sugar value of 0.12%. Since 0.1% blood sugar is normal, the increase above this, which follows the ingestion of levulose, causes the glycosuria. The active threshold for fructose is, therefore, about 0.02%. (24).

M. V. Radhakrishna Rao believes: (21)

I. That the levulose tolerance test is to be considered negative, if the maximum rise of blood sugar does not exceed 20 mg. per cent, and positive if it exceeds 30 mg. per cent.

II. If the maximum rise of blood sugar is in between these two readings (i. e.—between 20 and 30 mg. per cent), the test is considered doubtful.

According to Stockton Kimball—(Guy's Hospital—Reports, London, ———— 2.), it is apparent that there is, as Joliffe stated, a very definite difference in the rise and fall, depending on the fasting level. The group with a fasting level below 100 mg. per cent shows a tendency to a higher rise in the first hour and a less pronounced fall in the second, than is shown by the group with the fasting level of 100 mg. per cent or over.

For normals, the principles of response may thus be stated, "the lower the fasting level, the higher the consequent rise"—any rise in excess of the average during the first hour is followed by a prompt fall to fasting or below during the second. It is worthy of note that in no case in which the rise during the first hour reached or exceeded a level of 115 mg. per 100 cc of blood, was there a failure to return, during the second hour, to or below the fasting level.

A definite contrast, then, is shown between the behavior of the groups with the fasting level below 100 mg. per cent and those with the fasting level of 100 mg. per cent or over.

It is apparent that a low fasting level allows of a higher rise and slower fall, but that these effects do not always follow. One should, therefore, consider the fasting level, when deciding whether or no, tolerance is impaired. It is the sugar curve with which we are dealing, both the rise and fall must, therefore, be noted. It is more reliable to judge by the extent of this rise and fall, than to set a fixed sugar level which must be reached before a test may be called positive, and which can, therefore, never be surpassed by a normal person. There are positives which do not reach Tallerman's level of 135 mg. per cent, and apparent normals which overreach Joliffe's level of 125 mg. per cent. The following are the criteria of hepatic insufficiency finally reached on the basis of the study of normals.

I. Elevation of 30 mg. per cent or more above the fasting level within the first hour, or over 15 mg. per cent in the second hour.

II. Elevation from a fasting level of below 100 mg. per cent to within five of either of these figures, or from a fasting level of 100 mg. per cent or over, to within 10 of either of these figures, may be considered suspicious, but not diagnostic of hepatic insufficiency.

III. If, however, a suspicious level reached during the first hour, is accompanied by a suspicious level for the second, the test is to be considered positive.

Numbers II and III of the above-mentioned criteria may be stated differently, thus—"an one hour rise of 25 to 30 mg. per cent from a fasting level of 100 mg. per cent or above, if accompanied by a failure of the second hour level to drop to below 10 and 5 mg. per cent, respectively, of the fasting level, is diagnostic of hepatic insufficiency. If either the first or second hour reading is thus affected, but the other is within normal range, the test may be regarded as suspicious. (2).

The following cautions are necessary. (2).

I. If the fasting level is below 80 mg. per cent, no positive conclusions can be drawn from the curve.

II. A positive diagnosis can never be safely made upon an elevated second hour level alone, unless the first hour level, has reached at least 10 mg. per cent above the fasting level. If this caution is not observed, the effect of a possible delay in absorption cannot be excluded.

III. If the fasting level is 120 mg. per cent or above, the greatest care must be exercised in drawing conclusion, that a Cirrhotic liver or one badly out of function will not metabolise any carbohydrate properly. Observation of cases which showed a levulose curve, all readings of abnormal range, but which yet had a return of the test to within normal limits after treatment, revealed that liver disease alone may produce a test of this type, and one is always faced with the difficulty of distinguishing the condition from diabetes. It will be seen it is not safe to make a diagnosis on the basis of a levulose test, in which all of the values remain 120 mg. per cent or above. If, however, the fasting level is below 120 mg. per cent, or the fall during the second hour is to a level below 120 mg. per cent, one may accept the test as valid.

In evaluating suspicious tests, the conception of the whole curve should be kept in mind. If the level reached during the first hour is suspiciously high, but is followed during the second hour by a sharp fall to below the fasting level, the test is presumably normal. The less sharp the second hour fall, the more should the test be considered significantly abnormal. (2).

(*To Be Concluded Next Month*)

CANCER COMMENT

Pathology as an Aid to Cancer Control

Marion L. H. Freeman*

The chief object of the American Society for the Control of Cancer has been the dissemination of knowledge regarding cancer. This has resulted in an increasing number of patients seeking medical advice regarding small suspicious lesions. With this trend in the cancer situation, the physician finds it increasingly difficult to diagnose cancer, for the earlier a suspect presents himself the less is the distinction between the malignant and the benign. The Delaware Committee has anticipated a more concerted effort in cancer control by organizing five tumor clinics, reported in The Journal last month, and by establishing a tissue diagnosis service whereby any Delaware physician in good standing may submit tissue which he suspects of being tumor to the pathologist of the Committee and receive a diagnosis.

From February 14, 1933, when the first specimen was sent in, to July 19, 1934, a total of 184 specimens have been submitted, of which 68 proved to be malignant. Physicians wishing to avail themselves of this service should place the material in 10% formalin as soon as possible and mail it to The Tissue Diagnosis Service, 14th & Washington Streets, Wilmington. It is expected that the physician will co-operate by sending the patient's name, address, age, a brief clinical record, and statement of operative findings, and where possible a contribution of one dollar or more from the patient to cover the technical and secretarial costs. It is very satisfying to note that thus far the service is nearly self-supporting.

The method of diagnosis by microscopic examination of biopsy specimen is now very extensively used, especially since there is abundant evidence to prove that most cancers may be subjected to biopsy without jeopardizing the prognosis if treatment is started within four days. The biopsy specimen need not be large—very satisfactory specimens of bladder tumors are obtained by means of a Bradsford-Lewis rongeur forceps through the cystoscope—but it is important to select the proper site. The margin of the tumor with a bit of adjacent normal appearing tissue is best. Tissue excised with the scalpel is preferable to that removed by electric resection because the unavoidable heat incident to the latter method may distort the cells most necessary to make a diagnosis. The site of biopsy may be coagulated subsequent to the excision.

The method of obtaining material by means of aspiration is especially adaptable to tumors beneath the surface. As described by Stewart in The American Journal of Pathology, 9, 801, 1933, the skin is infiltrated with novocaine and a small puncture wound made. An 18-gauge needle attached to a Record syringe is then inserted with the piston closed until it is felt to enter the neoplasm. A

(*Continued on Page 218*)

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*Secretary-Technician of the Delaware Tumor Clinics.

The President's Page

To the Members of the Medical Society of Delaware:

Allow me at this time to thank you, one and all, for the co-operation you have given me towards the betterment of our State Medical Society in 1934.

Since being inducted into the office of President I have visited the county societies in all three counties, and have been very much pleased with the attendance, as well as with the interest shown at each meeting. The programs were very interesting and instructive and I am sure everybody has benefited by them.

We also had a midyear meeting of the State Society in Dover in April, with a large attendance and a very good program. Though the Legislature has been in session since our last yearly meeting, medical matters were not brought before them because they were too busy with serious financial problems which they were supposed to have settled. Therefore, our Society was not called upon to guard medical legislation.

Next month, October 9th to 10th, the Medical Society of Delaware will hold its annual meeting in the new State House at Dover. May I ask as a special favor of very member to please set aside those days to be present in Dover and make this meeting a grand success? An exceptionally fine program is arranged. Our local committee on arrangements has tried to make things pleasant and appetizing for all. On Tuesday evening, October 9th, Mrs. McDaniel, who is president of the Auxiliary, and we wish to extend to every member of both organizations an invitation to be our guests at an informal house-warming at our home, 229 South State street. So come to Dover Tuesday prepared to spend the night.

Hoping to see a large attendance and thanking you in advance for whatever you may do towards making our 1934 meeting a success, I am

Yours very sincerely and fraternally

JOSEPH S. McDANIEL.

EDITORIAL

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware. Issued about the twentieth of each month under the supervision of the Publication Committee.

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Articles sent this Journal for publication and all those read at the annual meetings of the State Society are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Manuscript should be sent in typewritten, double spaced, wide margin, one side only. Manuscript will not be returned unless return postage is forwarded.

The right is reserved to reject material submitted for either editorial or advertising columns. The Publication Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

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All correspondence regarding editorial matters, articles, book reviews, etc., should be addressed to the Editor. All correspondence regarding advertisements, rates, etc., should be addressed to the Business Manager.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

It is suggested that wherever possible members of the State Society should patronize our advertisers in preference to others as a matter of fair reciprocity.

Subscription price: $2.00 per annum in advance. Single copies, 20 cents. Foreign countries: $2.50 per annum.

VOL. VI SEPTEMBER, 1934 NO. 9

ON TO DOVER

The One Hundred and Forty-fifth Annual Session of the Medical Society of Delaware will be held in the new State House, at Dover, October 8th, 9th and 10th. The House of Delegates meets on the evening of Monday, the 8th. The scientific sessions begin the morning of Tuesday, the 9th, and conclude in the afternoon of Wednesday, the 10th. An excellent program has been arranged, which will bring pleasure and profit to the profession.

For the ladies—and the men—there will be a house-warming at the home of President McDaniel on Tuesday evening. The annual meeting of the Auxiliary will be held on Wednesday, the 10th.

Every member of both the Society and the Auxiliary should make a special effort to attend the session this year. This duty especially devolves upon the Wilmington members who owe it to themselves and to their organizations to make these down-State meetings as successful as the ones held in Wilmington. Wilmington and vicinity has over one-half of the members of the Society, and to make the annual meeting a real success, to make it worth while for guest speakers from out of the State to prepare interesting papers, and to show the proper *esprit de corps* towards our down-State confreres there should be present this year more physicians from upper New Castle County than from the rest of the State put together. And that applies to the women folks just as much as it does to the men's organization.

So, on to Dover, and show President Doctor McDaniel and President Mistress McDaniel that we appreciate their official efforts. The best way to show personal appreciation is to make a personal appearance.

THE JOURNAL congratulates two Delaware medical officials upon their recent marriages. Dr. Arthur C. Jost, executive secretary of the State Board of Health, was married on July 30th. Dr. Douglas M. Gay, director of clinics of the Delaware section of the American Society for the Control of Cancer was married on August 2d. To both of these worthies, our congratulations. And to the fortunate spouses, our felicitations.

THE JOURNAL also congratulates the Wilmington General Hospital on its recent approval, by the A. M. A., for the training of internes. This makes the second hospital in this State so recognized, the Delaware Hospital being the other.

MEDICAL SOCIETY OF DELAWARE

Officers and Committees for 1934

President ....Joseph S. McDaniel
Dover
First Vice-President ....Paul R. Smith
Wilmington
Second Vice-President ....E. L. Stambaugh
Lewes
Secretary .... W. H. Speer
Wilmington
Treasurer .... A. L. Heck
Wilmington

Councilors

Lewis Booker, New Castle
R. B. Hopkins, Milton
James Martin, Magnolia

Delegate

To A. M. A.

James Beebe, Lewes

Alternate

C. E. Wagner, Wilmington

STANDING COMMITTEES

Committee on Scientific Work

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C. B. Scull, Dover
J. R. Elliott, Laurel

Committee on Public Policy and Legislation

J. B. Niles, Townsend
John H. Mullin, Wilmington
William J. Marshall, Milford
W. H. Speer, Wilmington
J. S. McDaniel, Dover

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W. H. Speer, Wilmington

Committee on Medical Education

E. R. Mayerberg, Wilmington
C. L. Harmonson, Smyrna
W. P. Orr, Lewes

Committee on Hospitals

Stanley Worden, Dover
Samuel Marshall, Milford
John Pierson, Wilmington

Committee on Necrology

W. T. Chipman, Harrington
Dorsey Lewis, Middletown
M. C. Smoot, Seaford

SPECIAL COMMITTEES

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G. C. McElfatrick, Wilmington; Ira Burns, Wilmington; Harold Springer, Wilmington; Robert W. Tomlinson, Wilmington; J. W. Bastian, Wilmington; H. V. P. Wilson, Dover; S. M. D. Marshall, Milford; R. C. Beebe, Lewes; J. R. Elliott, Laurel.

Committee on Tuberculosis

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Committee on Syphilis

I. L. Chipman, Wilmington; A. D. King, Wilmington; N. R. Washburn, Milford.

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W. E. Bird, Wilmington; W. H. Speer, Wilmington; C. E. Wagner, Wilmington; J. P. Wales, Wilmington; C. P. White, Wilmington; Wm. J. Marshall, Milford; C. G. Harmonson, Smyrna; James Beebe, Lewes; H. M. Manning, Seaford.

Advisory Committee, Women's Auxiliary

G. W. K. Forrest, Wilmington; P. R. Smith, Wilmington; T. H. Davies, Wilmington; I. J. MacCollum, Wyoming; E. L. Stambaugh, Lewes.

Committee on Criminologic Institutes

M. A. Tarumianz, Farnhurst; Stanley Worden, Dover; U. W. Hocker, Lewes.

Representative to the Delaware Academy of Medicine

W. O. LaMotte, Wilmington

IN MEMORIAM

L. Heisler Ball, Faulkland ...Oct. 18, 1933
Cecil deJ. Harbordt, Dover..Nov. 6, 1933
William H. Hancker, Farnhurst, Dec. 29, 1933
Luther S. Conwell, Camden ..Feb. 5, 1934
Joseph Bringhurst, Felton ....Feb. 6, 1934
Peter W. Tomlinson, Wilmington July 25, 1934

They have gone to rest mourned by the many to whom they have administered during times of trial. When the pain incident to all conditions of mind and body seemed beyond endurance, they came, they comforted, they relieved. Now departed, may they rest in peace.

GENERAL INFORMATION

BY-LAWS

Article III

Section 1. The Society shall hold an Annual Session, during which there shall be held daily General Meetings, which shall be open to all registered members and guests. This Session shall be held at such time and place as has been fixed at the preceding session by the House of Delegates.

Article X

Section 1. No address or paper before this Society, except those of the President, invited guests, and orators, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes, nor more than once on any subject except by unanimous consent.

Section 2. All papers read before this Society shall be typewritten, double spaced, with wide margins. Carbon copies will not be accepted.

Section 3. All papers read before this Society shall become its property. Each paper shall be deposited with the Secretary immediately after reading.

Section 4. The deliberations of this Society shall be governed by parliamentary usage as contained in the latest edition of Roberts' Rules of Order, when not in conflict with these By-Laws.

Section 5. The Principles of Medical Ethics of the American Medical Association, as contained in the latest edition, shall govern the conduct of members in their relations to each other, to this Society, and to the public.

Essayists will please remember that all papers presented before the Society become the property of the Society and therefore are not to be published or submitted for publication elsewhere than in the DELAWARE STATE MEDICAL JOURNAL.

MONDAY, OCTOBER 8th, 1934

Meeting of the House of Delegates

New State House

8 P. M.

1. Call to Order.
2. Roll Call.
3. Reading of Minutes of Last Session.
4. Appointment of Committee on Nominations.
5. Reports of Officers.
    a. President.
    b. Secretary.
    c. Treasurer.
    d. Councilors.

6. Reports of Standing Committees.
    a. Scientific Work.
    b. Public Policy and Legislation.
    c. Publication.
    d. Medical Education.
    e. Hospitals.
    f. Necrology.
    Reports of Special Committees.
    a. Woman's Auxiliary.
    b. Cancer.
    c. Syphilis.
    d. Library.
    e. Criminologic Institutes.
7. Report of Delegate to the American Medical Association.
8. Unfinished Business.
9. New Business.
    a. Resolutions.
    b. Communications.
    c. Appropriations.
    d. Approval of Scientific Program.
    e. Selection of Meeting Place.
    f. Miscellaneous.
10. Adjournment.

TUESDAY, OCTOBER 9th, 1934

General Session

New State House

9:30 A. M.

Invocation:
Rev. S. B. Hiley, Pastor, Baptist Church, Dover

Address of Welcome:
Hon. Wallace Woodford, Mayor of Dover

The History and Progress of Medicine
Joseph S. McDaniel, M. D., Dover

Report of the House of Delegates

SCIENTIFIC PAPERS

1. A Preliminary Report on Tuberculosis Prevention in Delaware
Joseph P. Wales, M. D., Wilmington

2. Gastro-intestinal Disease: Some Recognized Essential Diagnostic Procedures.
Robert W. Tomlinson, M. D., Wilmington

3. Motion Picture: The Plastic Surgical Reconstruction of the Deformed Nose
Keith Hospital for Plastic Surgery, New York

4. Recent Investigations on the Physiology of Gastric Secretion and Its Relation to Clinical Medicine
Lay Martin, M. D., Baltimore

LUNCHEON

by the

KENT COUNTY MEDICAL SOCIETY

Mapledale Country Club

12:45 P. M.

GENERAL SESSION

New State House

2 P. M.

5. Treatment of Pneumonia by Means of Serum, Oxygen Tent and Pneumothorax
Henry Jump, M. D., Philadelphia

6. Intracranial Injuries of the Newborn from the Standpoint of the General Practitioner
P. Brooke Bland, M. D., Philadelphia

7. Medico-Legal Problems
Hon. Daniel J. Layton, Chief Justice of Delaware

8. Pyelitis in Children
Charles E. Wagner, M. D., Wilmington

9. Infant Feeding, with Special Reference to Lemon Feeding
John B. Baker, M. D., Milford

OPEN HOUSE, INFORMAL

President and Mrs. McDaniel
229 State Street, South

8:30 P. M.

Members of the Society and the Auxiliary Invited

WEDNESDAY, OCTOBER 10th, 1934

GENERAL SESSION

New State House

9:30 A. M.

10. The Results of High Voltage X-ray Treatment in Metastatic Carcinoma of Bones
George C. McElfatrick, M. D., Wilmington

11. The Prevention and Cure of Cancer
Douglas M. Gay, M. D., Wilmington

12. Nasal Accessory Sinuses from the Standpoint of The General Practitioner
Emil R. Mayerberg, M. D., Wilmington

13. Faulty Body Mechanics a Factor Causing Diagnostic Errors
William Bates, M. D., Philadelphia

Election of President

LUNCHEON

by the Society

Hotel Richardson

1 P. M.

EXHIBITS

Delaware State Board of Health, Dover.

Keith Hospital, New York City.

WOMAN'S AUXILIARY

to the

MEDICAL SOCIETY OF DELAWARE

WEDNESDAY, OCTOBER 10th, 1934

Hotel Richardson

10 A. M.

Prayer
Secretary's Report ....Mrs. Gerald Beatty
Treasurer's Report,
Mrs. Charles E. Wagner
President's Report ..Mrs. Joseph McDaniel
Vice-Pres., New Castle Co. ..Mrs. Ira Burns
Vice-Pres., Kent Co. ...Mrs. W. C. Deakyne
Vice-Pres., Sussex Co.,
Mrs. E. L. Stambaugh

Committee Reports

Organization ....Mrs. George McElfatrick
Finance .... Mrs. James W. Butler
Social ....Mrs. Raymond B. Moore
Program ....Mrs. Edgar Q. Bullock
Medical Welfare ......Mrs. Victor C. Nah
Hygeia ....
Editor ....Mrs. W. Edwin Bird
Delegate to Cleveland Convention,
Mrs. Lawrence Jones
Guest Speaker ...Mrs. W. Wayne Babcock
"What We Are Doing",
Mrs. Robert W. Tomlinson
President, Woman's Auxiliary to the American Medical Association
Recommendations
Resolutions
Adjournment

LUNCHEON

Hotel Richardson

1 P .M.

Social Afternoon

CANCER COMMENT

(*Continued from Page 211*)

vacuum is then created by partially withdrawing the piston; the needle is advanced into the tumor. The maneuver is repeated once without entirely withdrawing the needle from the mass, then the piston is released gradually. The material within the needle is forced out upon a small piece of filter paper and placed immediately in 10% formalin, or it may be smeared on a slide.

The method of frozen section finds its greatest use in guiding the surgeon at the time of operation. For example, a questionable lump in the breast may be incised and a small portion sent to the pathologist who will usually be able to return a diagnosis within five minutes. The surgeon can then continue with a conservative or radical operation as indicated. Frozen sections are also useful in guiding the surgeon during operation in cases in which conservation of tissue is important. Of course, the method necessitates the presence of a pathologist, with proper equipment somewhere near the operating room.

The modern treatment of malignant disease is predicated by much more than a diagnosis of cancer, although this is unquestionably of first importance. The selection of the form of treatment, whether by surgery, radium, or X-ray, depends quite as much upon the nature of the cancer as upon its location, extent, and the general condition of the patient. A knowledge of whether a tumor is adenocarcinoma, squamous cell carcinoma, melanoma, fibrosarcoma, etc., gives valuable aid in prognosis and makes it possible to predict the response of the tumor to the form of treatment selected.

Some years ago Broders divided squamous cell carcinoma of the lip into four arbitary grades of malignancy on the basis of microscopic appearance. Subsequently a similar grading was applied to other carcinomas. The slowest growing, most differentiated, and hence most radio resistant forms are graded as I. The most rapidly growing, least differentiated, and hence most radio-sensitive forms are graded as IV. Thus a sort of universal language has been developed by the use of which tumors may be concisely and precisely described, the treatment indicated, and the outcome predicted.

The fullest use of pathology as an aid to cancer control can best be accomplished by the complete co-operation of surgeon, radiologist, internist, and pathologist and the correlation of their data in the tumor clinic.

MISCELLANEOUS

Delaware Academy of Medicine

The facilities of the Academy Reading Room are available to all members. Mrs. Watson, the librarian, will be very glad to look up literature on any subject desired. Because of very satisfactory contact with the Surgeon-General's Library this service is unlimited. Arrangements can also be made for members living some distance from Wilmington to receive this service by mail.

The regular monthly clinical pathological conferences will begin again in October. The scientific meetings committee will announce a further program later.

In the latter part of November there will be a special meeting of the Academy with an invited lay audience, at which time an authoritative speaker on some appropriate subject relative to medical history will be heard. Further details will be published later. It is hoped that this meeting will be very well attended.

Medico-Military Symposium

The 1934 Medico-Military Symposium for Medical Department Reserve Officers of the Army and Navy will be held at the Mayo Clinic, from October 7th to 20th, both dates inclusive.

This is the Sixth Annual Inactive Duty Training Course to be held at the Mayo Clinic and will follow the plan which has proven so satisfactory in past years; that is to say, the morning hours will be devoted to attending clinics on subjects selected by the student officers, and the afternoon and evening hours given over to work in medico-military subjects. The medico-military program will be under the personal supervision of Colonel Kent Nelson, M. C., U. S. Army, Corps Area Surgeon, Seventh Corps Area, and Captain J. B. Mears, M. C., U. S. Navy, District Medical Officer, Ninth Naval District.

The staff and faculty of the Mayo Clinic have placed their unexcelled facilities at the service of their government in the interest of preparedness and have extended an invitation to all the service to participate. The two weeks' excellent clinical post-graduate work must make a definite appeal to all who are interested in their profession, and does not incur as great a loss of time for the private practitioner that normally pertains to post-graduate work along professional lines.

The general motif of the medico-military part of the symposium will be "Public Health and Its Relation to National Defense." The problems of administration in military service present features not dealt with in private practice. In the great field of sanitation as applied to military service the medical officer has a distinct specialty. This course offers valuable and interesting training for the medical officer in all the components of our national defense. A splendid program of a thoroughly practical nature has been carefully compiled and the speakers selected for their ability to present authoritatively the subject assigned.

Application for this course of Inactive Duty Training should be made either to the Corps Area Surgeon, Seventh Corps Area, Omaha, Nebraska, or to the District Medical Officer, Ninth Naval District, Great Lakes, Illinois. Applications should state the character of the work the candidate desires to follow in the morning hours. All student officers are expected to attend and participate in the afternoon and evening sessions. Each applicant should fully understand that the invitation to accept this course of study without charge is extended by the Mayo Clinic; that the project is without expense to the government; and that one hundred hours' credit will be given those who take and complete the course. While it is desirable to attend the entire course, those whose time will not permit this may join or leave at any time and will receive credit for the hours spent in training. Uniforms are optional.

New York Academy of Medicine

The Seventh Annual Graduate Fortnight of the New York Academy of Medicine will be devoted to a consideration of Gastrointestinal Diseases. The Fortnight will be held October 22 to November 2.

Sixteen important hospitals of the city will present co-ordinated afternoon clinics and clinical demonstrations. At the evening meetings prominent clinicians from various parts of the country who are recognized authorities in their special lines of work will discuss the various aspects of the general subject.

A comprehensive exhibit of anatomical, bacteriological and pathological specimens and research material will be shown. Many of the exhibits will be demonstrated.

The profession generally is invited to attend. A complete program and registration blank may be secured by addressing Dr. Frederick P. Reynolds, New York Academy of Medicine, 2 East 103d street, New York City.

Postgraduate Assembly

The International Assembly of the Inter-State Postgraduate Medical Association of North America will be held in the Public Auditorium, Philadelphia, Pennsylvania, November 5-9, 1934. Many distinguished teachers and clinicians will appear on the program. A major list of the names of the contributors to the program, with other information, appears on page V of this Journal. All members of the Medical Society of Delaware are cordially invited to attend. Registration fee of $5.00 admits all members of the profession in good standing.

Vaccine for Infantile Paralysis

Pneumonia is next on the "public enemy" list of Dr. John A. Kolmer, the modest Philadelphia medical professor, who claims discovery of the first preventive for infantile paralysis.

He has already developed a fluid, he disclosed, which has been used effectively in immunizing rabbits from the lung inflammation, and the same vaccine has met with "a large degree of success" in experiments in humans.

While carrying on the pneumonia work, he said, he will attempt to supplement his infantile paralysis vaccine with a serum to "cure" that disease after infection sets in.

After three years of experiments, Doctor Kolmer announced, they had found a fluid that could be produced cheaply, could be injected into the skin of children without fear of harmful effect and produce lifelong immunization.

Before trying the vaccine on themselves, he said, it was injected into the brains of many monkeys. The vaccinated animals showed no sign of illness when paralysis germs were injected, but their unvaccinated fellows fell victims to the virus within 5 to 7 days and became paralyzed and died.

The harmlessness of the vaccine was demonstrated, the professor explained, in repeated inoculation of the monkeys at weekly intervals for as many as ten weeks. And animals vaccinated 10 months ago are still completely immune.

Three doses of the vaccine at weekly intervals are considered sufficient by Doctor Kolmer for human immunization. Doses range from one-half to three cubic centimeters of the vaccine, which is treated with sodium ricinoleate, a chemical substance from castor beans. The virus is not killed in the fluid, but changes enough to make it safe for humans.

The spinal cord of one monkey will supply enough vaccine, he estimated, to give 50 children the required number of inoculations.

The vaccine must be used six weeks before paralysis germs attack the body in order to be effective, he said. —*A. P.*

Re: Cocomalt

Clinical tests prove conclusively that pregnancy is a drain upon the woman's calcium reserve. Very often this is manifested by softening of the bony structure, including the teeth. It is a well-known fact that pregnant women very often have decaying teeth, and even loose their teeth during pregnancy. Such women need their calcium intake increased and their ability to mobilize calcium augmented, for the drain upon calcium is so great at times as to actually abstract calcium from their bones and teeth.

Cocomalt, because of its admixture of milk, supplies an abundant amount of calcium and at the same time a sufficient amount of Vitamin D to help mobilize the calcium. Cocomalt is licensed by the Wisconsin University Alumni Research Foundation under Steenbock Patent No. 1,680,818. One glass or cup of Cocomalt, prepared as directed, contains not less than 30 Steenbock (81 U. S. P. revised) units of Vitamin D. It is accepted by the Committee on Foods of the American Medical Association.

Chronic Brucellosia

Alice C. Evans, Washington, D. C. (*Journal, A. M. A.*, Sept. 1, 1934), summarizes the main facts relative to the incidence of chronic brucellosis as follows: 1. Contact with the casual organisms is of common occurrence. 2. The severity of infection is known to vary from the acute disease to a form so mild that the subject is unaware of the illness. 3. Clinical diagnosis is extremely difficult, even in severe cases. 4. Brucella infection is known to occur in animals that appear to be healthy. 5. There exists in this country a common malady—the so-called neurasthenia—which in its clinical manifestations cannot always be distinguished from chronic brucellosis. These facts challenge the right of a physician to make a diagnosis of neurasthenia—a diagnosis regarded as dishonorable by the patient, and also by his family, his employer and his friends—without considering, among other possibilities, the possibility of chronic brucellosis.

BOOK REVIEW

Manual of the Diseases of the Eye. By Charles H. May, M. D., 14th Edition. Pp. 496, with 376 illustrations. Cloth. Price, $4.00. Baltimore: William Wood & Company, 1934.

This edition, as the previous ones, is an admirable manual. It is a book for undergraduate medical students and general practitioners, and not a substitute for larger works. Common diseases are well described. The colored plates are excellent. The volume has been brought up to date with very little increase in its convenient size.

DELAWARE STATE MEDICAL JOURNAL

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Volume VI
Number 10

OCTOBER, 1934

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THE HISTORY AND PROGRESS OF MEDICINE

Joseph S. McDaniel M. D.
Dover, Del.

There is probably no more fascinating story than that of the rise of scientific medicine. Its beginnings were in mystery and superstition; its progress encumbered with ignorance and quackery. Above these it has risen to become the most beneficent science of the modern world.

The story of medicine is that of a long and difficult struggle with the mysteries of life; a struggle which has brought about astounding achievements in the prevention and cure of disease, amelioration of human suffering, and prolongation of life.

In the past, medicine had its place only at the bedside of the individual patient. Today medical science has transcended these narrow limits and has become a guiding force in modern civilization. In becoming such, medicine has enlisted to its aid every agency of our society, even the participation of the individual citizen.

It would be impossible for me to cover in my alloted time very much of the subject relating to the progress of medicine by starting with the primitive man and showing in detail the slow progress through the various centuries up until the nineteenth, and then the many advances from the beginning of the nineteenth to the present time. Therefore, I will only try to mention the high points and the most important steps.

The healing methods that thousands of years ago sprang up and were developed by one group of primitive savage people were of the same type as those developed by all others. In principle they are the same kind that are practiced today by native people in the fastnesses of Africa and in all remote and uncivilized regions.

For primitive or ancient medicine is the expression of a philosophy that grows from the natural reactions of all ignorant men placed in hazardous surroundings. In the early days long before civilization had developed savage man was not, as some people believe, a carefree creature living a free and idealistic life in the midst of an abundant Eden. Instead, this ancient ancestor of ours was a terror-driven, ignorant savage facing a hostile world. By day he slunk through the rough woods in search of food, in constant fear of death by stronger men and beasts. In the dark he hid from unseen terrors, and in his nakedness he shivered in the cold of night. He trembled before the lightning and fell prostrate before the thunder. When convulsed in the agony of disease, he hid like a dumb beast. Injured, he crawled to his lair to die of hunger or be murdered by ruthless enemies.

Even as he crouched and shivered in a world to which he was illy suited physically, he sought an explanation for his plight. He was ignorant but he was intelligent. The mere fact that he developed mysteries established him as a man, for no other animal has ever had the intelligence to reason on abstract matters.

The man of primitive times looked upon a world which terrified him. Like a child frightened by darkness he peopled his environment with creatures of his imagination. These intangible reflections of his mind he called spirits and ghosts. For all the phenomena that he could not understand in the world about him these imaginary beings, so he believed, were responsible. One such phenomenon was *disease*.

This is still the belief of the savage man—to prevent or cure the disease the spirits must be controlled; they must be either forced away or bribed to leave. Some individuals among the savages of the tribe were shrewder, cleverer men than the rest; or perhaps they were not quite so normal as the others—a little queer. At any rate they were not well understood by the others, who came to believe that they had power over the spirits, i.e., the mysterious forces that sent the sunshine and the rain, that brought game to the hunter, and gave success in combat. Such a man was the one, then, to whom the others turned for relief from the spirits that brought disease. He was the medicine man. Some were priests as well as doctors. The most general practice of the savage medicine man was a crude variety of what we call today "psycho-therapy," a treatment that has its influence upon the mind of the patient. For example, the medicine man in treating his patient often ostensibly tried to frighten the spirits away. He put on a costume that was bizarre and fantastic. He danced and shouted before his patient, all the while shaking a rattle. As a result of this procedure the patient seemed actually to improve in health. And he did temporarily. But the cause of this improvement was the influence of the patient's mental processes upon his bodily functions. As long as he sincerely believed that the medicine man was driving away the spirits, the pain was eased and anxiety dispelled. He felt better; some were cured. How close this compares with some of the cults today!

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*Presidential Address, read before the Medical Society of Delaware, Dover, October 9, 1934.

So much for the primitive medicine and treatments.

History shows us that the practice of medicine was regulated by the Babylonians as far back as 2250 B. C. One of the most ancient medicines of civilized people of which we have definite knowledge is that of Egypt—the Egypt of 4,000 to 5,000 years ago. Medicine was then a mixture of superstition and religion on the one hand, and practical measures on the other. The ancient Egyptians carried out religious healings by invocations to the Gods; they administered medicinal substances, most of which had no virtue but some few of which did; and they performed surgical operations of a crude sort, such as splinting broken limbs.

But if we look back to the days of early civilizations, Egyptian, Babylonian, Jewish, we can see rising almost imperceptibly above the morass of mystery the beginning of rational medical practices.

There we find some surgery, some well-attested drugs, and most important of all, the *hygiene*, the *preventive medicine*, founded by the ancient Hebrews. But here is a striking fact that shows the earlier stage in the transition of medicine. Although the Jewish people developed a very sound and rational code of hygiene, such was their plane of civilization that, like all medicine of the time, they built this code into their religion. Medicine and religion had not yet separated. Sanitation at their hands became a religious precept; the priests were sanitary police. It was among the ancient Greeks that the earliest principles of scientific medicine were formulated.

Hippocrates separated medicine from religion and then for this new field he supplied a philosophy and an ethics that were destined to be the great guiding influences of future medicine. Hippocrates did not create the medical knowledge of his time; the Egyptians long before the Greeks, had observed symptoms and had found some practical remedies.

The medical knowledge of isolated facts recorded upon their stone tablets often seems fully as great as that which Hippocrates possessed. No doubt it was, but here is the great difference. Hippocrates took empirical knowledge made up of isolated facts and co-ordinated it; he made it into a flexible system. Other men had observed the symptoms of disease, but it was Hippocrates who first sat beside his patients and painstakingly sought out symptoms and recorded them; and these symptoms were to him not an end in themselves but indications of an underlying condition, a struggle between the patient and the disease which affected him. He took clinical case histories. He founded the bedside method which was to become the distinctive attribute of all great physicians. Having recorded the symptoms of his patients, Hippocrates after wide experience was able to define and classify diseases. There he founded the art of diagnosis and prognosis. But throughout all his work his attention was centered upon the patient, not merely upon his symptoms; he dealt with the man as well as with the disease. He kept in his practice the balanced relation between science and art which was to be the distinguishing quality of all great clinicians in all ages. The descriptions of disease left by Hippocrates were based on keen and careful observation; they stand today as models of their kind. After his time such accurate observations were not again made in medicine for over eighteen hundren years.

After Hippocrates, civilization and medicine both declined and there was very little advancement until the seventeenth century.

The last of the great physicians of the Roman period was Galen, who influenced medicine for centuries more than any other man. He was a skilled physician but his lasting fame rests on the fact that he performed experiments to demonstrate the facts of physiology.

The greatest single contribution to scientific medicine in the Renaissance Period—1453 to 1600—was Vesalius. He was a Belgian, born in the little town of Wesele from which comes his Latin name. He was educated in the University of Louvain. After graduating from the medical school he wanted to do advanced work, but found no facilities at home. For anatomical study the best he could do was to filch the bones of criminals hanged in chains and thus piece together a skeleton. He went to Paris hoping to find better opportunities. His best source of material then but again only bones was the old catacombs in which the Parisians of long ago had buried the bodies of the dead. At the age of about twenty-five years, Vesalius went to Italy and there found abundant material for dissection. He stayed some twenty years in Italy and in 1542 published his famous text book of Anatomy "Fabrica Humani Corporis" which in its first edition has now become one of the Bibliographic treasures of medicine. As the result of this book, he was asked to become the royal physician to Philip II of Spain, who at that time was a great monarch in the world. Vesalius found himself unhappy without opportunities for research work and is said to have attempted a dissection on the body of a nobleman apparently dead but whose heart was still beating when his chest was opened; and in reparation Vesalius made a pilgrimage to the Holy Land but was shipwrecked and perished on the return voyage when he was looking forward to the chair of anatomy at Padua, which he had accepted.

Italy was at this time the great home of graduate education and anatomical development; the most convincing testimony is to be found in the number of Italian names that have become attached to anatomical structures, as for example, Pons Varolii in the brain, the fissure of Rolando, the Vidian canal in the skull, Eustachian tube, the Fallopian tube, the organ of Corti in the ear, Malpighian bodies in the spleen and kidney, Scarpa's triangle, and many others.

The sixteenth and seventeenth centuries saw the development of not only anatomy, the basic science of medicine, but also of pathology the basic science of disease, and physiology the basic science of health.

The greatest medical scientist of the English-speaking countries, William Harvey—1578 to 1657—the discoverer of the circulation of the blood lived about the middle of this period. He was also the greatest medical scientist of his time. His discovery and his research methods had a deeper influence on modern medicine than that of any other man except Vesalius. By experiments and observation he came to the absolute conclusion that the motion of the blood is continuous, going out through the arteries and coming back through the veins, a true circulation. It was his studies and his method of research rather than his conclusions that were of importance for his time and that made Harvey so important a factor for the development of medicine in a scientific way in the generations after his day.

After Harvey, the greatest medical scientist of the seventeenth century and the greatest investigator who took up the use of the microscope was Marcello Malpighi—1628 to 1694—who has been proclaimed the father of histology. He was a physician to Pope Innocent XII. With the inadequate microscope of that time it is marvelous how Malpighi observed details. In embryology he secured clear and definite ideas of such minute details as the aortic arches, the head poles, the neural groove, the cerebral and optical vesicles. His discovery of the capillaries rounded out Harvey's work.

The two great practical medical scientists of the sixteenth century were Paracelsus and Pare, respectively, physician and surgeon. Paracelsus, born the year after the discovery of America, was a Swiss—Aureolus Theophrastus Bombastus von Hohenheim, to use his own ambitious name, from which is said to be derived our word "bombast." He is the founder of chemical pharmacology in therapeutics. In spite of his many faults, for he was conceited and contentious to the last degree, his influence was far-reaching and his services to scientific medicine very real. He thought he knew ever so much more than he really did, but he knew the limitations of his knowledge in many ways. He was a strenuous opponent of the wandering quacks of the time and also of the foolish pretensions of information obtained from inspection of the urine. He believed that nature cured diseases much more than physicians did, he deprecated officious meddling with disease, he introduced mineral baths, and was one of the first to analyze mineral waters. He used opium in the form of laudanum, and mercury, sulphur, iron and arsenic with great success. He wrote on miners' diseases, the first treatise on occupational disease we have, and he was the first to notice relation between cretinism and goitre.

The other great man of the time in medicine, Ambroise Pare, was a barber's apprentice who became an army surgeon and developed into the greatest surgeon of his time. He re-introduced the ligature and discovered that wounds healed better when let alone than when too much fussed with. Gunshot wounds were supposed in this time to be poisoned and boiling oil was poured along the track of them as an antitoxic precedure, but once when Pare's supply of oil gave out on the battlefield and he expected to find the patients who were without it dead or very ill the next day, he found them all in better health than the others. He dared to follow his own observation rather than the tradition in the matter and thus saved many lives and an immense amount of suffering. He knew the limitations of his own powers of healing and used to say in a famous expression of his, "I treated him, but God cured him."

He was an intensely practical man and invented many new surgical instruments. He felt that after he treated a patient surgically it was his business to make life as livable as possible for him. He worked out various prosthetic apparatus for use after amputation, popularized the employment of the truss in hernia, introduced massage for the limbering up of joints after breaks and dislocations, and adopted the use of artificial eyes after eye removal. He described fracture of the neck of the femur and the difficulties of securing union. He recognized the interference with urination following hypertrophy of the prostate, and was probably the first to suggest that flies must be transmitters of infectious disease. In obstetrics his description of podalic version introduced that practice to the profession, and he had the courage to suggest the induction of labor in cases of uterine hemorrhage. He seems to have been the first to suggest syphilis a cause of aneurysm. Nearly every phase of medicine and surgery owes something to him.

In the seventeenth century came the beginning of American medicine. The first hospital in the New World was erected by Cortez in the City of Mexico in 1524, a very beautiful building yet standing. The first hospital in what is now the United States was established on Manhattan Island in 1663.

The first medical writing with regard to America came from Doctor Chanca, who accompanied Columbus on his second voyage and wrote an account of his experience. He described the climate and its relation to health, some of the diseases of the natives, and the various materials, such as cinchona and Indian herb remedies, which they used for curative purposes.

We now come to the history of the eighteenth century. It is true the archives of the Eighteenth Century are not intercalated by many such epoch-making contributions to medical science and art as other centuries, but withal

"Our little systems have their day,
They have their day and cease to be."

and the discovery of vaccination by Jenner towards the close of the eighteenth century, above all other achievements and advancements, renders its place secure for all time in the annals of medicine.

Eighteenth century medicine, in point of time extending from 1700 to 1799, both years included, was dominated by theories and systems, by cults and creeds. Nevertheless, this era was productive of numerous beneficial and lasting reforms in the healing art. Quackery and superstition were gradually being eliminated from medical practice; the royal touch was fast losting its therapeutic efficacy; and witchcraft and astrology were slowly but surely giving way to more humane and more rational explanations as to the theory and causation of disease. The increasing popularity of male obstetricians, the far-reaching influence of practical anatomy and pathology as promulgated by the two Hunters, by Baillie, and by Morgagni and the founding of numerous hospital and medical and scientific bodies throughout England, on the Continent, and in America, all conspired to make the eighteenth century one well worthy of serious consideration by medical historians.

In hurriedly passing over the eighteenth century it seems necessary to mention in the progress of anatomy the two Hunters, Monroe, Douglas, Scarpa and Meckle. In physiology several of the outstanding names are Haller, Reaumer, and Hewson.

Reaumer in a series of experiments upon a pet cat, performed in 1752, succeeded in isolating the gastric juice and demonstrating its solvent effect upon foods, thereby materially advancing the physiology of digestion.

William Hewson, 1739-1774, an English physiologist, achieved distinction through his work on the lymphatics and on the coagulation of blood.

In chemistry, chief among the notable advancements was the influence exerted upon the theory of respiration by the discovery of the four principal gaseous constituents of the atmosphere, viz: carbon dioxide by Black, 1757; hydrogen by Cavendish, 1766; nitrogen by Rutherford, 1772; oxygen by Priestley, 1771.

A good physician must, of necessity, be a good pathologist, and the same remark is applicable to the surgeon. Pathology, that branch of medicine whose object is the knowledge of disease, was cultivated with assiduity in the eighteenth century. The outstanding man in this subject was Giovanni Morgagni, 1682-1771, an Italian anatomist and the founder of pathological anatomy.

In materia medica, therapeutics, and practice of medicine the outstanding men of the eighteenth century were:

John Tennent of Virginia, publishing the first account of Seneca or the Seneca snakeroot, commending it most highly in the treatment of pleurisy, pneumonia, and the bite of the rattlesnake.

The name of William Withering, 1741 to 1799, of Shropshire, England, one of the ablest clinicians of his time, is ever memorable as the pioneer in the correct use of digitalis in affections of the heart. The well-known Dover's Powder, pulvus ipecacuanhae compositus, was introduced into medicine by Captain Thomas Dover.

The first pharmacopoeia to be printed in America was prepared by Dr. William Brown of Virginia, who succeeded Benjamin Rush as Physician-General of the Middle Department. Several new editions were made during the century and included such drugs as ergot, ipecac, tartar emetic, lime water, iron sulphate, tincture of iron, Glauber's salts, sweet spirits of nitre, syrup of aquilla, liquor potassae, aconite, arnica, castor oil, Hoffmann's anodyne, paregoric, etc.

The outstanding physician was Herman Boerhaave, professor of botany, medicine and chimistry at Lyden.

The outstanding surgeon was John Hunter, the younger brother of William Hunter. His studies of tendons laid the foundation for the operation for the cure of club feet. He discovered the "Collateral Circulation of the Blood" one of the most important discoveries in surgery.

The works on hygiene in the eighteenth century relate to gymnastic exercises, to the location of cities and towns and the maintenance of cleanliness therein, to the construction of aqueducts, fountains and sewers, to the segregation of lepers, and the establishment of free baths for the poor.

Ophthalmology already had assumed a conspicuous place among the specialties. A number of excellent contributions were made to the literature; many operations were performed. Unfortunately at this period of medicine charlatans of both sexes also plied their trade as oculists, in a few instances, with success which seemed incredible.

The nineteenth century was to see the solution of the two most important problems of disease, its basis in the body, cellular pathology as developed by Virchow; and its causation, which Pasteur was to demonstrate as due mainly to microbic activity. Above all it was to see the use of preventive medicine and the reduction of human mortality as the result of the growing control of the infectious and contagious diseases and the development of hygiene and sanitation.

A revolutionary change in medical science was needed; for in spite of the axiom "Be sure to do no harm" physicians were doing more harm than good.

The most characteristic trait of the medicine of the beginning of the nineteenth century was venesection. It was considered that disease was in the blood and that it could be removed by blood letting. Our own President Washington is usually said to have died from diphtheria, but there is some question whether he did not die from exhaustion because of blood letting. The use of the lancet went out and the leech came in. In the year 1833 over forty millions of leeches were imported to France. Calomel and other drastic purgatives followed the fad for bleeding and leeching. The first forty years of the nineteenth century witnessed little of the momentous movement toward modern medicine.

In the decade 1840 to 1850 we find a continuation of the description of diseases with the fidelity that Hippocrates had employed. It is in this period that Carl Basedow described exophthalmic goitre, that William Stokes recorded his classical account of "heart-block," that Thomas Addison wrote on pernicious anaemia, and that Rudolph Virchow commenced his studies that were to be consumated in his great thesis of cellular pathology. In 1843 Claude Bernard founded experimental medicine when he commenced his study of the glycogenic function of the liver.

And during this decade for the first time we turn to America for a great medical discovery. It was the most useful and certainly the most humane that has been made in all the centuries. It was the discovery of a practical anaesthetsic for surgical operations. It was discovered we might say, three times in three different places within a period of four years, Georgia, Connecticut, and Massachusetts. Crawford Long of Georgia, Horace Wells, a dentist of Hartford, Connecticut, who tried nitrous oxide with success in the extraction of a tooth, and William Morton, a student at Massachusetts General Hospital, gave ether during a surgical operation. Before this time, without anaesthetics operations were performed only for urgent necessity; the shrieking patient was held on the table by strong men; the surgeon to the detriment of his skill but in the interest of mercy, was as speedy in his manipulations as was possible.

In 1860-1870 it is difficult to realize that in a decade which was so near to our own time the cause of infection was not known. Men still believed that a miasma, an emanation from marshes, poisoned wounds and caused fevers. When Lister, the English Quaker surgeon, became in 1860 the Professor of Surgery in the University of Glasgow, wound infection was expected in practically every surgical case and the expectation was fulfilled with the most frightful types of septicemia and putrid gangrene. During the Civil War the average mortality after amputation was well above 50%. But there was one exception, and it was this exception that caught Lister's attention. Simple fractures did not lead to pus formation; all other wounds did. Now, the only difference so Lister reasoned, between the open wound and the wound in the simple fracture was that one was exposed to the air and the other was not. Something in the air, then, must cause the infection, that is, the pus and putrification in the open wound. Lister showed that bacteria cause putrification in wounds. Lister attempted to kill the bacteria and keep them out of the wounds and first tried carbolic acid with good results. He thus formed the principle of antiseptis. And when subsequent work showed that much of the infection came not from the air but from the dirty hands of surgeons and wound dressers this antiseptic principle grew into the aseptic principle. Therefore, modern surgery, surgery of the abdomen, the brain, the chest, the joints, dates from this time.

Turning now to the years 1870 to 1880, we come very near to our own times as we finally reach the decade in which the bacterial cause of infection was established, probably the most far-reaching discovery in all human progress. The work of Pasteur and Koch overshadows all medical events of the time.

The greatest contribution to preventive medicine, the man who saved more lives than any other man who ever lived, was Louis Pasteur. He was a chemist. His work started with the purely lay problem of why wine spoils. He studied fermentation and putrefaction. He was able to show that putrefaction resulted from the contamination and subsequent growth of bacteria. To prevent this bacterial growth he developed the process of heating the fluid, known by his name as "Pasteurization." He also conceived the idea that bacteria were the cause of the various febrile diseases transmitted from person to person. His experiments consequently led to his discovery of the principle of vaccines, and proved their value in anthrax and chicken cholera and rabies. It was in 1882 with the aid of Pasteur's theories that Robert Koch, a member of the German Imperial Health Department, made the momentous discovery of the cause of tuberculosis. During the decade of 1880 to 1890, Koch and Pasteur attracted world attention and there was an active search for all disease bacteria, with the result that the majority of the more important pathogenic organisms were identified—the bacilli of cholera, typhoid, diphtheria, tetanus and meningitis, to name only a few—and it was equally natural that men should seek to protect themselves against bacteria; hence it was in this decade that we have the investigations of bacteria in milk, the first steps toward the pure milk of today, a movement that had enormous influence upon the decline in infant mortality. Sanitation, sewage disposal, and purification of water, measures that make modern urban civilization possible, had purpose given to them as the result of the bacterial discoveries of this and previous decade.

This now brings us up to modern times where most all of you who are listening to me have witnessed the many advances in medicine and surgery, and it is, therefore, not necessary to go into details. You have seen the discovery of the organism of syphilis in 1905 by Fritz Schaudinn, the diagnostic serum test by Wasserman, and the specific treatment by Ehrlich in 1910. You have seen the great achievement and advancement in "organotherapy" which led to the greatest practical result of the isolation of insulin by Banting and Best, and prolonged the lives and reduced the suffering in diabetes. You have watched the research work in the study of vitamines, those necessary food substances that exert an almost hormone-like action in promotion of normal bodily function. And let us pause to record that great discovery of only a few years ago, the one which is associated with the names of Whipple, Minot and Murphy, that the once invariably fatal disease, pernicious anaemia, yields almost miraculously to liver or extract of liver. Our knowledge of anaphylaxis is a development of the twentieth century. You have watched and helped to reduce the mortality rate in tuberculosis, and opened the way for the eradication of a disease which at one time was called the "Captain of the Men of Death."

We are now watching the great effort in cancer research, and let us hope and pray that in a short time we will know the exact cause, prevention, and cure of this much-dreaded condition which is apparently increasing.

What contributions and discoveries in medicine and surgery await us during the next decade no one can tell. However, we have reached a time when we are not surprised. So the physician today aided by science and industry stands, as A. Lawrence Lowell has said, "Upon the prow of the ship of civilization." No longer is he scanning the horizon for the sight of sea monsters and other fabrications of mystery and magic; with chart in hand and scientific instruments of precision at his disposal, he is piloting us towards the peaceful harbor of old age, undisturbed by the terrors which formerly haunted the most intrepid voyager on the sea of life.

With the growth of scientific medicine in the modern time has come, very surprisingly, a development of quackery of many kinds. A great many of our people who have had the benefits of higher education have become devotees of these systems of healings, such as bonesetters and adjustors, respiropaths and other "paths" of the most varied kind. It is mainly the educated classes who patronize these and not the ignorant, as might be expected. The correction of this "social evil" is manifestly depended on the special education of the intelligent classes in scientific medicine. The medical profession will have to undertake this as one of its duties. Hippocrates said that a physician can sometimes cure, he can nearly always relieve, but he can always console. This third duty is sometimes forgotten in the busy rush of modern medical practice. Patients must be treated as human individuals and not as cases, if we are not to have wanderings to all sorts of healers by educated people who are solicitous and worried over mild or fancied ailments. We have begun to realize the importance of the attitude of mind of people toward their ills, real or fancied. This is one of the most important factors in the production of a symptomatic condition of discomfort and in the cure of these cases. Here lies the next great advance in *applied* clinical medicine.

What made medical progress possible was the gigantic development of the natural sciences. There was extraordinary development at the same time in another field, technology, and the result of this was the industrialization of the modern world. The same elementary force that has made medical progress possible has changed the aspect of the world so profoundly, that the doctor has difficulty in finding his place in this new world, which is ruled by iron economic necessity. The number of doctors grew and a ruthless competition arose. While the doctor of yesterday did not need to bother about his bills, today he has to merchandise his services. He has to appraise the cash value of each service that he performs. The more efficient medicine has become, the more complicated and the more expensive it is, and the more difficult it is for the doctor to give free medical care. Today, therefore, we are in the very serious situation that we run the risk of seeing a great effort wrecked by maladjustment.

Long ago an attempt to deal with this situation was made in Europe by the introduction of social insurance. Sickness insurance was introduced, first in Germany; not by the socialists, but by Bismarck and the conservatives, which is very often overlooked. Sickness insurance is the cheapest way to take care of poor patients, because it makes them take care of themselves, by saving part of their wages for the expense of sickness. There can be no doubt that the sickness insurance in the different European countries has had remarkable results for the health of the people. Germany, soon after a lost war, with famine and revolution added, had health conditions that were just as good as those existing in the victorious countries. And the compulsory sickness insurance is surely responsible for this, to a very large extent. And yet, it is beyond question that the different insurance systems as they are working in Europe today have very serious drawbacks. A new type of medical service was created, which endeavored to preserve the old forms as much as possible. The doctor, in most cases, still was paid according to his individual services, but as the insurance companies had not unlimited means, the fees sometimes were very inadequate. On the other hand, abuses on the part of the patient as well as the physician, occurred, so that both patients and doctors had to be controlled. The result was a huge administrative machinery with endless red tape.

The next step in the development was the one undertaken by Russia, where the whole working population is insured against sickness, and where the same position is given to the physician as the priest, the judge, the teacher, already have in other countries.

We medical men have a strong "esprit de corps". We have a glorious history and we are justified in being proud of it. What unites us is that, unlike other professions, all of us, whether we work at the bedside, in the laboratories, or at the writing desk, have but one purpose, to benefit the sick man. We have developed strong professional organizations, from the very beginning of our history. The Greek physicians and surgeons had their guilds, their codes, and their ethics, were members of their faculties, which were very powerful organizations. From the sixteenth century on medical societies developed and today all over the world are very influential bodies. All this necessarily makes us very conservative, but we must have the courage to face the present-day situation, openly. We have a very absorbing profession from the first day we enter medical school, and we have to work hard, this leaves us little time to see or to watch what is going on around us. In this way it happens that many of us have not quite realized how fast the world is changing its aspect. There is a strong trend away from individualism. Health and disease are no longer considered a private matter of the individual. In many countries laws have been made to enforce health. Society, more and more, feels responsible for the welfare of all its members. It has placed the means of retaining or regaining health within the reach of every one, and in return, it may well demand health of the individual. We may like this development, or we may dislike it, but we cannot help it. All of us are dependent on each other. If large parts of the population suffer it is quite obvious that the rest likewise will be affected. To us medical men the idea that one sick organ affects the whole organism should be familiar.

There is one lesson that can be derived from history. It is this: that the physician's position in society is never determined by the physician himself, but by the society he is serving. We can oppose the development, we can retard it, but we will be unable to stop it.

The development of medicine has reached a crucial point. It is our duty to save the efficiency of a noble profession, which has had not only a great past but gives promise of a still greater future. Never before has society presented the physician with so wide a field of activity and with so much potential power.

Now in closing, I wish to mention an important problem that we physicians must face:

About five years ago a committee was formed to study the "High Cost of Medical Care." This committee spent a million dollars, which had been supplied by the Millbank and other funds. At first glance such a study seemed justified for we have seen how hard it has been for some families to meet the expenses of long illness. But this study has shown that the average family's annual medical bill in this country is much less than the bill for luxuries such as cosmetics, chewing gum, and candy. The figures of $150 against $674 have been given. The difference is that the money for luxuries is spent in small sums day by day and seems no hardship, while the bill for medical service comes in a lump sum. Out of this study has come a "majority report," signed by social workers who have a socialistic trend, and eminent physicians who are largely out of touch with the relations of general practitioners; and a "minority report", signed by men who know our problems and point of view. Much discussion and even agitation have developed over the merits of these plans. The American Medical Association and many State societies have approved the "minority report" and are vigorously opposing the solutions offered by the "majority report." Without going into details or discussing the merits of the plans which have been offered, I must point out to you the one thing we must face. That is the effort of the Millbank and Rosenwald Foundations to introduce some form of "State medicine" by legislation, as suggested by the "majority report." The plans are patterned after the British and German sickness insurance laws. Both of these have worked to the disadvantage of physicians, and have not improved the service to the patient. They have substituted quantity service for quality service, and have broken down the fine personal relation which exists here between physician and patient. Any plan to meet the cost of sickness, whether it be by budgeting, weekly saving as in Christmas funds, or such, will be desirable. All efforts to care for the indigent sick and disabled must be continued. But the management and control of medical practice *must not* fall in the hands of the State officials. There is evidence that bills will be offered to many Legislatures in the next session to institute such forms of practice.

We must be prepared to oppose such measures. I, therefore, recommend that our Committee on Legislation be urged to take up this matter and be prepared to oppose any such legislation as may be presented to our Legislature.

Delaware Academy of Medicine

Surgical Conferences—First Friday, at 8:45 P. M.

Pathological Conferences—Third Friday, at 8:45 P. M.

IMPAIRMENT OF HEPATIC CARBOHYDRATE FUNCTION ESTIMATED BY LEVULOSE AND GALACTOSE*

By Robert W. Tomlinson, M. D.**

(Concluded from last Month)

Summary (2)

While Spence and Brett's figure of a rise of 20 mg. per cent as the commencement of hepatic insufficiency is undoubtedly correct in many instances, it cannot be safely applied at all levels. One can have more confidence in the test, by having higher absolute standards and by reading the range just below these, as suspicious. If, however, the reading for the first and second hours are both suspicious, one can feel justified in calling the test positive. This range of suspicion must vary according to the fasting level, as it is evident that there is a marked difference of behavior, according to the level of the fasting sugar. This amount of grace and variation from strictly normal limits may be allowed. Fewer normals, however, than early cases of genuine hepatic pathology, lie within this range. While, therefore, the standards given have a full margin of safety, they have also an elasticity, which takes variations in blood sugar level in full consideration. It is to be kept in mind in grading, that the levels of blood sugar which continue elevated through the second hour have particular importance, signifying as they do, continuing inability of the liver to handle sugar. A curve which rises in the second hour above the level of the first, means serious hepatic insufficiency provided the first hour elevation is sufficient to prove that absorption is satisfactory.

It has been observed that levulose yielded positive evidences of hepatic dysfunction in cases of entamoeba—hystolytica, cirrhosis of the liver, alcoholism, biliary disease, cholangitis, syphilis and cardiac disease.

Galactose

Galactose differs from levulose in that the former is assimilated very imperfectly, whereas the assimilation limits of the latter are so high that they can scarcely be exceeded. Fructose is on a par with glucose as a glycogen former; galactose is not; but, if glycogen formation in the liver were the chief factor by which the accumulation of the absorbed sugar in the blood is prevented, then galactose should be immensely more effective even than glucose in raising the level of the blood sugar. (8).

The administration of galactose as a means of diagnosing liver abnormalities and also for estimating liver efficiency has been largely confined to the German clinics. Like glucose, it is a Monosaccharide, and is absorbed direct by the portal circulation into the liver. In health the ingestion of forty gm. results in no hyperglycemia, and no galactose appears in the urine, as the glycogenetic capacity of the liver is sufficiently powerful to transform the injested sugar into glycogen, with the passage of but small amounts into the peripheral circulation, and in consequence, only a small increase, if any, in the blood sugar value. It must, however, be administered in a pure state before any reliance can be placed on the results obtained. (10).

The metabolism of galactose is performed primarily with the co-operation of the liver and not with other tissues, and while it is not asserted that galactose is always sure, in so far as the investigators know, galactose metabolism depends not only on the condition of the liver, but also on the capacity of other tissues. The galactose and levulose tests do not agree in one third of all cases of hepatic disorders. In some cases the levulose test in the presence of a positive galactose test is slightly positive or completely negative. (14).

It has been shown that while the general tendency of liver disease is to depress the galactose tolerance, a certain number of cases is found, in which an apparently uncomplicated liver derangement is associated either with a normal or even increased power to utilize this sugar. (18).

Shay, Schloss and Rodis have concluded that galactose offers the best method of investigating the carbohydrate function of the liver, but do not consider it adequate as a routine test for liver function, but on the contrary view its limitations as definite. The superiority of galactose over levulose in testing liver function is based on the urinary output of galactose since this appears to serve as the best measure of the utilization of galactose by the liver. (4).

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In the studies of galactose similar methods were utilized as in the previous work. With the dosage of galactose injected intravenously, about twenty to thirty per cent of the sugar was recovered in the urine. Following complete removal of the liver, similar injections of galactose are followed by an excretion of more than eighty per cent of the sugar injected. If excretion is prevented by performance of bilateral nephrectomy, galactose remains in the blood several hours longer. Symptoms of hypoglycemia are not influenced by administration of galactose in the liverless animal. The liver appears entirely responsible for the conversion of galactose to glucose.

There are numerous difficulties involved in the interpretation of functional tests in which galactose is used. That intestinal administration of galactose to hepatectomized animals shows a loss (oxidation?) of large amounts of galactose in different animals was readily demonstrated. Uniform dosages of galactose administered intravenously in dogs with extensive cirrhosis of the liver, showed a much greater excretion of galactose than occurred in normal animals. However, extensive hepatic injury must be present, before any marked deviation from the normal response can be detected. This finding may be indicative of the extensive reserve function the liver is known to possess. (19).

It must be evident that the actions of galactose and levulose are fundamentally different. Galactose is absorbed with rapidity, and has but a five per cent utilization by the liver, and very little by the muscles, about fifty per cent of it is excreted by the kidneys. and Shay, Schoss and Bell state that an analysis of the urine makes a very satisfactory test, which may be utilized even in diabetes, because the galactose may be determined independently of the glucose. (2).

Standards of Galactose Tolerance Test

There is a difference of opinion about the output of galactose, which should be accepted as normal after the administration of 40 gm. of the sugar.

I. Bauer tabulated his findings as follows:

(a) Normal 0-1 gm.
(b) High normal 1-2 gm.
(c) Positive 2-3 gm.
(d) High positive 3-12 gm.

II. The greatest loss that has been observed in this series is 6.5 gm. (Davies 1927), who has concluded that any amount of over 2 gm. indicates a definite hepatic deficiency.

III. Shay and Schloss (1931) considered an output of more than 3.0 gm. of galactose in the five-hour period, following the administration of 40 gm. of galactose, as indicative of impaired liver function.

The Galactose Test

Summarizing the pathological states, it is seen in obstructive jaundice the galactose test is negative, while in toxic and infective jaundice (including the hepatitis called catarrhal jaundice), and in any other lesion of the hepatic cell the following is the salient feature, "a loss of over 2 gm. in the urine." (10).

In cases of jaundice due to factors other than acute diffuse damage of the liver cells, sufficient active liver tissue is present to carry on carbohydrate metabolism. Thus obstructive or haemolytic jaundice gives readings within the normal range. On the other hand, in jaundice accompanying acute diffuse damage of the liver cells, the carbohydrate function is impaired, and the liver, unable to utilize the normal quantity of galactose, allows a quantity of this sugar, larger than normal, to pass and reach the general circulation. In the absence of a kidney threshold for galactose, this excess appears in the urine. Hence, in jaundice with sufficient damage of the liver cells, quantities of galactose greater than three gm. appear in the urine. in the five hours following the ingestion of forty gm. of this sugar. Cases of chronic damage of the liver cells (tumor, cirrhosis, etc.) it must be remembered, can also reach the state. in which the carbohydrate function of the liver may show impairment.

The point that it is desired to make becomes obvious that under any condition in which the liver reserve for carbohydrate function is destroyed, there will be an abnormal galactose tolerance. All of the various conditions in which a high galactose output is reported, fall in the group in which diffuse damage of the liver cells, of an acute nature, has occurred. Catarrhal jaundice is most frequently reported, while arsphenamine jaundice, acute yellow atrophy, phosphorous poisoning, syphilitic hepatitis, and jaundice associated with lead poisoning, as well as the various acute infections, make up the list of other types of cases, in which this test has been found positive.

It is believed that the galactose tolerance test offers a means of identifying early the group of toxic and infectious jaundice, a group of cases that often tax the diagnostic acumen of the keenest clinicians. The basis for the use of a sugar tolerance test in differentiating these groups of cases of jaundice has been described; the differentiation is attributed to the diffuse destruction and derangement of the hepatic cells, with consequent disruption of the carbohydrate mechanism on the one hand and the survival of sufficient functioning tissue, to maintain so vital a process on the other. (21).

TECHNIQUE AND METHODS

In accordance with the holding of Tallerman, expressed under Technique and Methods Employed—the following schemata of procedure, in testing the levulose tolerance of those patients subjected to the experiment, was accepted:

I. After an all-night fast, subsequent to the ingestion of the evening meal, at about 5 p. m. the previous night, specimens of fasting urine and blood were obtained, the urine being voided into a suitable receptacle, and the blood extracted from a vein, and received in an oxalated tube.

II. The patients then swallowed 400 cc of water in which 50 gm. of levulose (made from the Jerusalem artichoke and marketed by Pffanansteil of Waukegan, Illinois, this being the form most free from impurities, and not producing nausea or diarrhea in any of the cases ingesting it) were dissolved.

III. From this time, specimens of blood (about 5 to 10 cc per specimen) were extracted from a vein and received in an oxalated tube every 45 minutes for 5 additional extractions, it being felt that, while antecedent tests reported in the literature had been carried on for a period of two hours only, which had seemed adequate to effect a logical conclusion relative to the cycle of events occurring in such interim, as expressive of the liver's ability to metabolize carbohydrate, it might be of interest to observe the blood levulose readings over one and one-half hours longer, to determine if additional data pertinent to such function might be evinced.

III. Specimens of urine, subsequent to the taking of levulose in amount aforecited, were collected hourly, for five hours.

IV. The blood sugar content of each of the six specimens was then estimated according to the technique described by Folin, Otto and Wu, Haein, Journal of Biological Chemistry, 38, 108, 1919; 41, 367, 1920.

V. The individual urinary specimens were examined separately for levulose and the total gm. output of levulose for the several specimens determined by the method exhibited in the recountal by Summer, J. B., Journal of Biological Chemistry, 62, 2187, 1924, because of a desire to determine the validity of the urinary excretion of levulose, as indicative of hepatic dysfunction in metabolizing carbohydrates, specifically levulose.

VI. The patients tested as to the ability of their liver function as displayed toward the metabolism of levulose, were, one or two days later, after a similar all-night fast, subsequent to the 5 p. m. meal of the evening before, and after voiding a fasting specimen of urine into a suitable receptacle, given 40 gm. of galactose (known to be free from contaminating impurities) dissolved in 400 cc of water, after which at every hour, for five hours, voided specimens of urine were collected in separate suitable receptacles for examination. Each of these specimens was examined for galactose content, and the total gm. of the several specimens was estimated by the technique described by Summer, J. B., Journal of Biological Chemistry, 62, 287, 1924.

VII. The establishment of the validity of the differentiation of levulose from galactose as a result of the last two mentioned methods was effected in the case of:

I. Levulose
   (a) By testing with hydrochloric acid.

II. Galactose

(a) By the music acid reaction.

Standards—Normal—Abnormal

I. It was decided, after serious consideration of the standards affecting the results evinced, subsequent to the use of levulose and galactose, as agents of expression of the degree of impairment of the hepatic glycogenic function, as portrayed by Joliffe, Tallerman and Kendall, aforecited, to

(A). Accept the figures of Tallerman, that a rise of thirty (30) mg. above the fasting blood sugar level within the first hour with a failure to return to within ten (10) mg. of the fasting blood sugar level by the end of the second hour be esteemed as indicative of impaired liver glycogen function, and that a rise of the blood levulose of twenty-five (25) mg. within the first hour, and a continuation of such level or its ascent to a higher level by the end of the second hour, should be considered suspiciously indicative of hepatic glycogen dysfunction.

(B). That a rise of the levulosuric index, in gm. total output at the end of five (5) hours, above 0.13 gm. should be looked upon as evidence of lack of normal liver glycogen function.

(C). That a galactosuria exceeding a total output of three (3) gm. at the end of five (5) hours, should constitute positive evidence of deficient hepatic glycogen function, and when the galactosuria totaled in gm. between two and one-half (2.5) and three (3) gm. total output, at the end of five hours (5) such should be interpreted as a suspicious lessening of hepatic glycogen function.

Methods

I. Positive or negative results are depicted by the letters P or M and where both appear, the result was viewed as suspicious. Normal results were indicated by the word normal.

II. By reading the titles of each table, the specific portrayals will be readily appreciated. In order to effect clarity of interpretation, the component sheets of each of the first three tables have been paged in parallel numerical sequence so that, for example, in tabular exhibition of Case One, the blood levulose, urine levulose, urine galactose reactions, with exhibition of test showing greater degree of positivity, diagnosis, treatment and result may be followed rapidly from the beginning of experimentation through the several separate tests.

III. Table IV is a comparative tabulation of the laboratory research in all cases reacting positively to the test agents, levulose or galactose, with the additional recordances of the van den Bergh, bromsulphalein and urobilinogen test results.

IV. Table V depicts through the medium of its left one-half the cases in which levulose alone, and the right one-half the cases in which galactose alone, yielded evidence of hepatic glycogen impairment.

V. Table VI portrays the one case of the series, in which both levulose and galactose reactions attested to lessening of hepatic glycogen function.

VI. Table VII contrasts the positivity of levulose or galactose; depicts the maximum elevation in mg. of blood levulose above the fasting blood sugar level; and contrasts the levulosuria and galactosuria readings of the second hour after the ingestion of fifty (50) gm. of levulose and forty (40) gm. of galactose.

Explanations Relative to Cases and Recorded Diagnoses

Case II. Diagnosis—Pleurisy with Effusion (left).

Presented clinically—Tenderness in right upper abdominal quadrant with the liver palpable three cm. below the right costal margin.

Case VI. Diagnosis—Rheumatic Heart Disease.

Clinically—Heart—marked precordial bulging with every heart beat-apex—3 cm. to the left of the midclavicular line in the sixth interspace, with precordial dullness markedly enlarged, marked systolic and diastolic murmurs, with transmission to the left axilla, loud aortic systolic and diastolic murmurs heard plainly over Erb's point and in the neck along the carotid. Typical Corrigan pulse.

Case VII. Diagnosis—Leg Ulcer

Clinically—Heart—slightly enlarged

to the left. Pulse—irregular in volume. Urobilinogen 1:100—van den Bergh—indirect, 2 mg. per 100 cc. Urine—faint trace of albumin.

Case XLI. Diagnosis—Diffuse Goitre with Hyperplasia.

Clinically — Heart — definite systolic mitral thrill, coarse systolic mitral and aortic murmurs. Urinalysis — faint trace of albumin. Urobilinogen plus up to 1:200—van den Bergh—indirect, 0.3 mg.—Icterus Index 5.

Case XLII. Diagnosis—Exopthalmic Goitre. Clinically—Heart—soft blowing systolic murmur at apex. Bromsulphalein—20%. B. M. R.—plus 49. Albumin—globulin ratio, 1:1.1.

Case XXII. van den Bergh—indirect, 0.8 mg.; direct, 0.5 mg. Bromsulphalein—20%; E. K. G.—Coronary Disease with Myocardial Degeneration.

TABLE I

Tabulation Results Comparatively—Blood Levulose and Urine Levulose

		Blood Levulose							Urine Levulose						
Case No.		Fast	45 min.	90 min.	135 min.	180 min.	225 min.	P or M	Fast	1 hr.	2 hr.	3 hr.	4 hr.	5 hr.	Gm. Output
		mg. 100 cc	mg. 100 cc	mg. 100 cc	mg. 100 cc	mg. 100 cc	mg. 100 cc		Gm.	Gm.	Gm.	Gm.	Gm.	Gm.	P or M
1		77	87	77	70	77	78	M	0.07	0.066	0.056	0.057	0.058		0.304 P
2	(100)	88	102	89	94	99	96	M	0.52	0.375	0.125	0.225	0.36	0.29	1.895
2	(50) (Gms)	72	71	71	81	77	77	M	0.048	0.075	0.072	0.054	0.054		0.303 P P
3	(100) (Gms)	84	100	102	99	99	85	M	0.192	0.200	0.567	1.299	1.4259	0.66	4.3439 P
3	(50) (Gms)	77	116	108	108	112	103	P	0.4	0.465	0.69	0.465	0.2	0.36	2.58 P
4		68	75	81	75	73	79	M	0.320	0.128	0.152	0.08	0.056	0.072	0.808 P
5		83	88	95	83	81	74	M	0.088	0.054	0.112	0.168	0.054	0.828	1.294 P
5	— —	90	109	96	91	88	92	M	0.35	0.68	0.40	0.186	0.534	0.486	2.636 P
6		86	123	103	93	86	82	M	0.309	0.810	0.240	0.276	0.162	0.072	1.871 P
7	(100) (Gms)	66	99	96	95	92	90	M	0.312	0.144	0.632	0.264	0.240	0.120	1.712 P
7	(50) (Gms)	85	90	83	85	89	82	M	0.250	0.270	0.168	0.156	0.240		1.08 P
8		86	90	91	99	106	100	M	0.152	0.130	0.084	0.156	0.210	0.144	0.876 P
9	(100) (Gms)	103	148	142	122	104	103	P	0.088	0.156	0.112	0.140	0.102	0.066	0.664 P
9	(50) (Gms)	99	122	113	96	86	90	M	0.360	0.048	0.081	0.330	0.312	0.196	1.259 P
10									0.186	0.190	0.020	0.045	0.135		0.576 P
11		103	129	144	139	129	118	P	0.440		0.09	0.116	0.128		0.774 P
12		75	85	71	86	69	78	M	0.714	0.2	0.244	0.204	0.246		1.608 P
13		100	118	123	120	108	100	M	0.08	0.15	0.232	0.368	0.248	0.312	1.390 P
14		39	45	36	39	40	38	M	0.165	0.150	0.180	0.330	0.540	0.540	2.105 P
15		50	54	54	49	45	45	M	1.020	0.180	0.255	0.395	0.330	0.420	2.6 P
16		113	113	102	109	109	111	M	0.210	0.232		0.488		0.360	1.29 P
17		89	96	86	86	86	86	M	0.990	0.125	0.180	0.450	0.480	0.480	2.7 P
18		78	92	86	86	83	78	M	0.978	0.08	0.06	0.105	0.03	0.03	1.283 P
19		103	138	117	88	85	68	M	0.144	0.124	0.384	0.680	0.380	0.220	1.932 P

TABLE I (Continued)

20	99	117	132	128	128	125	P	0.152	0.064	0.112	0.112	0.072	0.104	0.616 P
21	99	109	108	97	97	87	M	Did not void any urine						
22	65	144	153	128	113	108	P	Did not void any urine						
23	82	97	100	93	88	70	M		0.560	0.330	1.275	0.540		2.705 P
24	167	146	119	96	86	62	M	0.310	0.924	0.360	0.06	0.560	0.512	3.256 P
25	87	88	96	86	86	83	M	0.032	0.008	0.0144	0.034	0.01		0.0984 M
26	83	83	99	83	69	50	M	0.0192	0.0032	0.0048	0.008	0.0056	0.0076	0.0484 M
27	Unable to secure Venous Blood							0.728	0.105	0.09	0.28			1.2 P
28	79	96	84	77	78	78	M	0.0252	0.196	0.0925	0.0832	0.032		0.4289 P
29	78	81	79	97	100	74	M	0.0500	0.0832	0.0435	0.0352	0.0532	0.0144	0.2794 P
30	71	82	54	78	71	69	M	0.804	0.768	0.378	0.378	0.294	0.408	3.03 P
31	103	128	128	91	83	87	M	0.060	0.040	0.088	0.144	0.128	0.192	0.652 P
32	97	90	112	123	98	91	M	0.212	0.092	0.08	0.16	0.168	0.08	0.792 P
33	82	87	82	85	87	91	M	0.312	0.240	0.16	0.6	0.72		2.032 P
34	81	110	91	90	87	85	M	0.123	0.348	0.420	0.156	0.088	0.084	1.219 P
35	74	79	75	64	70	68	M		0.19			0.2		0.39 P
36	84	96	99	104	97	89	M		0.64		0.04			1.04 P
37	67	96	71	77	68	68	M	0.51	0.432	0.45	0.75			2.142 P
38	79	121	100	92	98	102	P	0.45	0.682	0.225	0.170	0.112	0.1	1.739 P
39	104	136	118	118	104	103	P	0	0.504	0.270	0.390	0.480		1.744 P
40	86	95	95	82	87	88	M	0.093	0.135	0.128	0.675	0.174	0.135	1.34 P
41	Unable to obtain either blood or urine levulose													
42	Unable to obtain either blood or urine levulose													
43	65	67	55	65	60	65	M	2.132		0.12	0.12			2.372 P

TABLE II

	Galactose							Comparative Tabulation Effect Sugar Ingestion						
	Urinary Excretion in Gms.							Blood Levulose	P M	Urine Levulose	P M	Urine Galactose	P M	More Valuable Indicator
Case No.	Fast	1 hr.	2 hr.	3 hr.	4 hr.	5 hr.	Gm Output	Mg 100 cc Maximum		Gm Output		Gm Output		Hepatic Dysfunction
1	Gm	Gm	Gm	Gm	Gm	Gm	P or M	Read. 87						
	2.94	0.34	0.34	0.2	0.52		4.34	Elev. 10	M	0.304	P	4.34	P	Galactose
2	0.732	0.252	1.22	0.640	0.3	0.132	3.276	Read. 102	P	1.895	P			
								Elev. 24						
							P	Read. 81	M	0.303	P	3.276	P	Galactose
								Elev. 9						
3	1.4	1.4	1.36	0.28	0.05		4.49	Read. 102	P	4.3439	P	4.49	P	Galactose
							P	Elev. 18						(100 Gm Levu.)
3	0.74	0.44	1.8	0.72	0.13		3.83	Read. 116	P	2.58	P	3.83	P	Galactose
							P	Elev. 39						(100 Gm Levu.)
3	0.48	1.8	0.64	0.52	0.96		4.4	Elev. 39		Not		4.4	P	Galactose
							P	Elev. 39		Obtained				
4	0.08	0.345	0.18	0.89	0.14		1.635	Read. 81	M	0.808	P	1.635	M	Normal
							M	Elev. 13						

TABLE II (Continued)

5	0.2160	0.128	0.9	0.064	0.075		1.283 M	Read. Elev.	95 12	M	1.294	P	1.283	M	Normal
5	0.544	0.172	0.54	0.576	0.44	0.564	2.936 P	Read. Elev.	109 19	M	2.636	P	2.936	P M	Galactose
6	2.208	1.056	0.564	0.275	0.304		4.407 P	Read. Elev.	123 37	M	1.871	P	4.407	P	Galactose
7	2.352	0.99	1.17	1.2	0.558	0.522	6.832	Read. Elev.	99 33	P	1.712	P		M	
							P	Read. Elev.	90 5	M	1.08	P	6.832	P	Galactose
8	0.14	0.07	0.085	0.07	0.055		0.42 M	Read. Elev.	106 20	M	0.876	P	0.42	M	Normal
9	0.136	0.172	0.172	0.064	0.136		0.68	Read. Elev.	148 45	P	0.664				
							M	Read. Elev.	122 23	M	1.259	P	0.68	M	Normal
10	0.09	0.54	0.0456	0.0126	0.0306	0.05	0.7688 M	Not Obtained			0.576	P	0.7688	M	Normal
11	0.72	0.105	0.192	0.184	0.168	0.048	1.415 M	Read. Elev.	144 41	P	0.774	P	1.415	M	Levulose
12	Unable to obtain. Patient left the Hospital.							Read. Elev.	86 11	M	1.608	P	Not Obtained		Levulose
13	Unable to obtain. Due to immediate operation.							Read. Elev.	123 23	M	1.390	P	Not Obtained		Normal
14	0.026	0.055	0.126	0.074	0.073		0.364 M	Read. Elev.	45 6	M	2.105	P	0.364	M	Normal
15	0.056	0.165	0.123	0.34	0.08		0.765 M	Read. Elev.	54 4	M	2.6	P	0.765	M	Normal
16	0.0632	0.0344	0.0048	0.0024	0.0031	0.0528	0.1607 M	Read. Elev.	113 0	M	1.29	P	0.1607	M	Normal
17	0.252	0.273	0.054	0.0944	0.085	0.0312	0.7896 M	Read. Elev.	96 7	M	2.7	P	0.7896	M	Normal
18	0.108	0.088	0.117				0.323	Read. Elev.	92 14	M	1.283	P	0.323	M	Normal
19	0.348	0.16	0.516	0.168	0.45		1.642 M	Read. Elev.	138 35	M	1.932	P	1.642	M	Normal
20	0.175	0.404	0.356	0.351			1.286 M	Read. Elev.	132 33	P	0.616	P	1.286	M	Levulose
20	0.152	0.115	0.262	0.96	0.255		1.744 M			M	Not Obtained		1.744	M	Levulose
21	Unable to obtain. Patient left the Hospital.							Read. Elev.	109 70	M P	Not Obtained		Not Obtained		Normal
22	0.096	0.33			0.67		1.096 M	Read. Elev.	153 78	P	Unable to void. not obtd.		1.096	M	Levulose
22	0.225	0.08	0.225	0.132			0.662 M	Elev. Elev.	78 78		not obtd. not obtd.		0.662	M	Levulose
23	Unable to obtain. Patient left the Hospital.							Read. Elev.	100 18	M	2.705	P	Not Obtained		Normal
24	1.183	1.32	1.672	2.025	0.8		6.98 P	Read. Elev.	167 0	M	3.256	P	6.98	P	Galactose
25	0.155	0.24	0.208	0.51	0.354	0.528	1.993 M	Read. Elev.	96 9	M	0.0984	M	1.993	M	Normal
26	0.162	0.174	0.175	0.095	0.085	0.125	0.796 M	Read. Elev.	99 16	M	0.0484	M	0.796	M	Normal
27	0.128	0.072	0.333	0.165	0.236	0.096	1.02 M	Not Obtained			1.2	M	1.02	M	Normal
28	1.02	2.08	0.255	0.696	0.688	0.384	5.123 P	Read. Elev.	26 17	M	0.4289	P	5.123	P	Galactose
28	0.575	1.4	1.26	0.27	0.145	0.660 0.340	4.65 P				Not Obtained		4.65	P	Galactose
29	Unable to obtain							Read. Elev.	100 22	M	0.2794	P	Not Obtd.		Normal
30	Unable to obtain, due to difficulty in micturition because of urethral stricture							Read. Elev.	82 11	M	3.03	P	Not Obtd.		Normal
31	0.04	0.648	0.426	0.2	0.1		1.408 M	Read. Elev.	128 25	M	0.652	P	1.408		Normal
32	0.66	0.14	0.468	0.144	0.9	0.48 0.216	2.348 M	Elev.	25		Not Obtained		2.348	M	Normal
32	0.528	0.9	0.912	0.152	0.204	0.222	2.918 P	Read.	123	M	0.792	P	2.818	P	Galactose
		0.416	1.12		0.54		2.076	Elev.	26				2.076	M	
33		0.68	0.16	0.112	0.08	0.09	1.122 M	Read. Elev.	91 9	M	2.032	P	1.122	M	Normal

TABLE II (Continued)

34	0.38	1.12	0.14	0.07	0.04		1.75 M	Read. Elev.	110 29	M	1.219	P	1.75	M	Normal
35	0.136	0.068	0.072	0.028			0.304 M	Read. Elev.	79 5	M	0.39	P	0.304	M	Normal
36	0.275	0.327					0.602 M	Read. Elev.	104 20	M	0.84	P	0.602	M	Normal
37	0.129	0.044	0.056	0.049	0.049		0.327 M	Read. Elev.	96 19	M	2.142	P	0.327	M	Normal
38	0.29	0.408	0.36	0.104	0.0624		1.2224 M	Read. Elev.	121 42	P	1.739	P	1.2224	M	Levulose
39	0.48	1.10	0.4	0.09	0.05		2.12 M	Read. Elev.	135 32	P	1.744	P	2.12	M	Levulose
40	0.63	0.98	0.15	0.144	0.04		1.944 M	Read. Elev.	95 9	M	1.34	P	1.944	M	Normal
41	2.65	0.95	0.21	0.24	0.22		4.27 P	Unable to obtain					4.27	P	Galactose
	0.288	0.464	0.624	0.540	0.462	0.42	2.798 P						2.798	P	Galactose
42	0.276	2.13	0.222	0.830	0.224	0.135	3.817 P	Unable to obtain					3.817		Galactose
	0.880	1.224	0.63	1.32	0.48	0.45	4.984 P	Unable to obtain					4.984	P	Galactose
43	0.69	0.54	0.453	0.0536	0.1254		1.862 M	Read. Elev.	67 2	M	0.12	M	2.372	M	Normal

TABLE III

Case No.	Diagnosis	Treatment	Result
1	Parenchymatous Hepatitis with early Cirrhosis	Medical	Discharged as improved
2.	Pleurisy with Effusion (Left)	Medical	Discharged as improved
3	Hepato—Cellular Jaundice—Gonorrheal keratoderma	Medical	Discharged as improved
4	Hysterical Vomiting	Medical	Discharged as recovered
5	Pulmonary Tuberculosis—Gastric Carcinoma	Medical	Discharged. No remarks
6	Rheumatic Heart Disease	Medical	Discharged. No remarks
7	Leg Ulcer	Medical	Discharged as improved
8	Carcinoma of Colon	Surgical-Colostomy	Still remains on House Surgical Services
9	Chronic Constipation—Achlorhydria—Possible Cholesterosis	Medical	Discharged. Unchanged
10	Bilateral Striatal Disease—Jaundice (undetermined) Monoplegia	Medical	Discharged. Unchanged
11	Duodenal Diverticulum—Gastric Hemorrhage Acute Parotitis	Medical	Discharged as recovered Acute Parotitis
12	Alcoholic Gastritis—Bronchial Asthma	Medical	Discharged as improved
13	Cholelithiasis	Surgical-Cholecystectomy	Discharged as recovered
14	Rheumatic Heart Disease—Mitral Insufficiency—Auric Fibrillation — Syphilis — Bronchial Asthma	Medical	Discharged. No remarks
15	Hypertensive Heart Disease	Medical	Discharged as improved
16	Myxoedema	Medical	Discharged as improved
17	Myxoedema—Umbilical Hernia	Medical Surgical—Repair of Hernia	Discharged as improved
18	Cholelithiasis	Surgical-Cholecystectomy	Discharged as recovered
19	Chronic Cholecystitis with Cholelithiasis	Surgical-Cholecystectomy	Discharged as recovered
20	Malarial Fever	Medical	Discharged as recovered
21	Deep Phlebitis left lower extremity—Cholelithiasis	Medical	Discharged as recovered
22	Coronary Disease—Bundle Branch Block	Medical	Discharged as improved
23	Hypertensive Heart Disease—Retinal Hemorrhage—Cystitis	Medical	Discharged. No remarks
24	Diabetis Mellitus—Hepatitis—Cerebral Thrombosis—Coronary Disease—Mitral Regurgitation	Medical	Discharged with no remarks
25	Arterio-Sclerotic Heart Disease, Hypertension—Liver Damage	Medical	Discharged with no remarks
26	Chronic Nephritis with Oedema—	Medical	Discharged as improved
27	Cholelithiasis	Surgical-Cholecystectomy	Discharged as recovered
28	Common Duct Stone	Medical Refused Operation	Discharged as improved

TABLE III (Continued)

29	Carcinoma Stomach with Metastasis with marked Gastric Retention—Arterio-Sclerotic Heart Disease	Medical	Discharged as inoperable
30	Arterio-Sclerosis—Cardio-Renal Disease with Hypertension—Syphilis—Urethral Stricture	Medical	Discharged as improved
31	Cholelithiasis	Medical Refused Operation	Discharged as unchanged
32	Carcinoma of Liver	Surgical-Cholecystectomy and exploratory laparotomy	Died (Autopsy confirmatory operative findings)
33	Amebiasis	Medical	Discharged as improved
34	Acute Catarrhal Jaundice	Medical	Discharged as improved
35	Hypo-adrenalinism	Medical	Remains on House Medical Service
36	Hypertensive Cardio-Renal Disease—Syphilis—Mitral Regurgitation—Chronic Myocarditis	Medical	Discharged as improved
37	Chronic Cardio-Renal Disease—Coronary Disease—Syphilis	Medical	Discharged as improved
38	Carcinoma Head of Pancreas—Obstruction Biliary Duct	Surgical Anastomosis Gall Bladder to Pyloric end of Stomach	Discharged as improved
39	Acute Jaundice—Cholesterosis Cholesterin Stone—Cholelithiasis	Medical	Discharged—as left against advice
40	Carcinoma of Liver—Secondary to Colonic Carcinoma	Medical	Remains on House Gastroenterological Service
41	Diffuse Goitre with Hyperplasia	Surgical Subtotal Thyroidectomy	Discharged as improved
42	Exopthlamic Goitre	Medical	Discharged as unchanged Signed Release
43	Amoebiasis	Medical	Remains on House Gastroenterological Service

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TABLE IV

Cases of Hepatic Dysfunction, Glycogen Formation Evidenced by Levulose or Galactose or Both with Van Den Bergh—Bromsulphalien—Urobilinogen Records and Diagnoses

Case No.	Diagnosis	Levulose mg per 100 cc P or M	Galactose Gm. Output P or M	Van Den Bergh Mg. %	Bromsulphalien % Retention	Urobilinogen
1	Parenchymatous Hepatitis with Early Cirrhosis	M	4.34 P	Less Than 0.2 mgm %	10% end of 10 min. 0 in ½ hour	1.180
2	Pleurisy with Effusion (Left)	M	3.276 P		Not performed	
3	Hepato-cellular Jaundice	18—P M (100 Gm) 39—P	4.49 P 3.83 P 4.4 P	Immed. Dir. Indir. 20 mg.	Not performed	1.100
5	Pulmonary Tuberculosis Gastric Carcinoma	M	2.936		Not performed	
6	Rheumatic Heart Disease	M	4.407 P		Not performed	
7	Leg Ulcer	33—M	6.832 P	Direct Immed.-Neg. Indirect—2 Mg.	Not performed	1.100
11	Duodenal Diverticulum—Gastric Hemorrhage—Acute Parotitis	41—P	M		Not performed	1.300
20	Malarial Fever	33—P	M	Indirect 5 Mg.	Not performed	1.300
22	Coronary Disease—Bundle Branch Block	78—P	M	Dir. Biphas 0.5 Mg. Indir. 0.8 Mg.	20% Retention	Not Performed
24	Diabetes Mellitus—Hepatitis—Coronary Disease—Mitral Regurgitation	M	6.98 P	Indir. .07 Mg.	No retention	Not Performed
28	Common Duct Stone	M	5.123 P 4.65 P	Dir. Mod. Immediate Indirect 19 Mg.	Not performed	1.30
32	Carcinoma of Liver	26—M	2.918 P M	Dir. Immed. Indir. 3 Mg.	20% retention	1.100 P

TABLE IV (Continued)

38	Carcinoma Head of Pancreas	42—P		M	Dir. Immed. Indir. 20 Mg.	Not performed	1.50
39	Acute Jaundice—Cholesterosis—Cholesterin Cholelithiasis	32—P		M	Immed. 10 Mg.	Not performed	1.300
41	Diffuse Goitre with Hyperplasia	M	4.27 2.798	P PM	Dir. Neg. Indir. 0.3 Mg. Ict. Ind. 5	Not performed	1.200
42	Exopthalmic Goitre	M	4.984 3.817	P P	0.2 Mg.	2 Mg. Dose 20% retention	1.20

TABLE V

Conditions in which Levulose alone was Positive			Conditions in which Galactose alone was Positive		
Case No.	Diagnosis	Levulose Mg. Per 100 cc	Case No.	Diagnosis	Galactose Gm Output
		P or M			P or M
			1	Parenchymatous Heptatis with ... early Cirrhosis	4.34 P M
			2	Pleurisy with Effusion (Left)	3.276 P
			5	Pulmonary Tuberculosis—Gastric Carcinoma	2.936 P M
11	Duodenal Diverticulum Gastric Hemorrhage—Acute Parotitis	41 P	6	Rheumatic Heart Disease	4.407 P
			7	Leg Ulcer	6.832 P
			24	Diabetes Mellitus—Hepatitis— ... Cerebral Thrombosis—Coronary Disease—Mitral Regurgitation	6.98 P ?
20	Malarial Fever	33 P	28	Common Duct Stone	5.123 P 4.65 P
22	Coronary Disease—Bundle Branch Block	78 P	41	Diffuse Goitre with Hyperplasia	4.27 P 2.798 P M
38	Carcinoma Head of Pancreas Obstruction of Biliary Duct	42 P	42	Exopthalmic Goitre	4.984 P
			32	Carcinoma of the Liver	2.348 M 2.918 P M
39	Acute Jaundice—Cholesterosis Cholesterin Cholelithiasis	32 P			

TABLE VI

Conditions in which both Levulose and Galactose Tests Were Positive

Case No.	Diagnosis	Levulose Mg per 100 cc	Galactose Gm Output
3	Hepato—Cellular Jaundice—Gonorrheal Keratoderma	(50 Gm) 39-P	4.49 P 4.4 P 3.83 P

TABLE VII

Highest Reading Increase of Blood Levulose and 2 hr. Readings Levulosuria and Galactosuria

Case No.	Diagnosis	Blood Levulose Mg. per 100 cc		Levulosuria			Galactosuria		
				%	cc	Gm.	%	cc	Gm.
1	Parenchymatous—Hepatitis with early Cirrhosis	P or M L or G G—P	10	0.04	140	0.056	0.4	85	0.34
2	Pleurisy with Effusion (Left)	G—P	24	0.05	150	0.075	2	61	1.22
2	Pleurisy with Effusion (Left)	G—P	24	0.05	25	0.125	2	61	1.22
3	Hepato Cellular Jaundice—Gonorrheal Keratoderma	G—M	39 (50 Gm)	0.9	63	0.567	0.6	228	1.36
				0.5	138	0.69	0.8	236	1.8
				Not performed			0.4	70	0.28
				Not performed			0.8	80	0.64
4	Hysterical Vomiting	Normal	13	0.4	38	0.152	0.5	36	0.18
5	Pulmonary Tuberculosis—Gastric Carcinoma	G—P M	19	0.4	28	0.112	3	30	0.90
6	Rheumatic Heart Disease	G—P	37	0.3	80	0.24	0.3	188	0.564
7	Leg Ulcer	G—M	5 (50 Gm)	0.6	28	0.168	0.3	390	1.17
8	Carcinoma of Colon	Normal	20	0.7	12	0.084	0.5	17	0.085

TABLE VII (Continued)

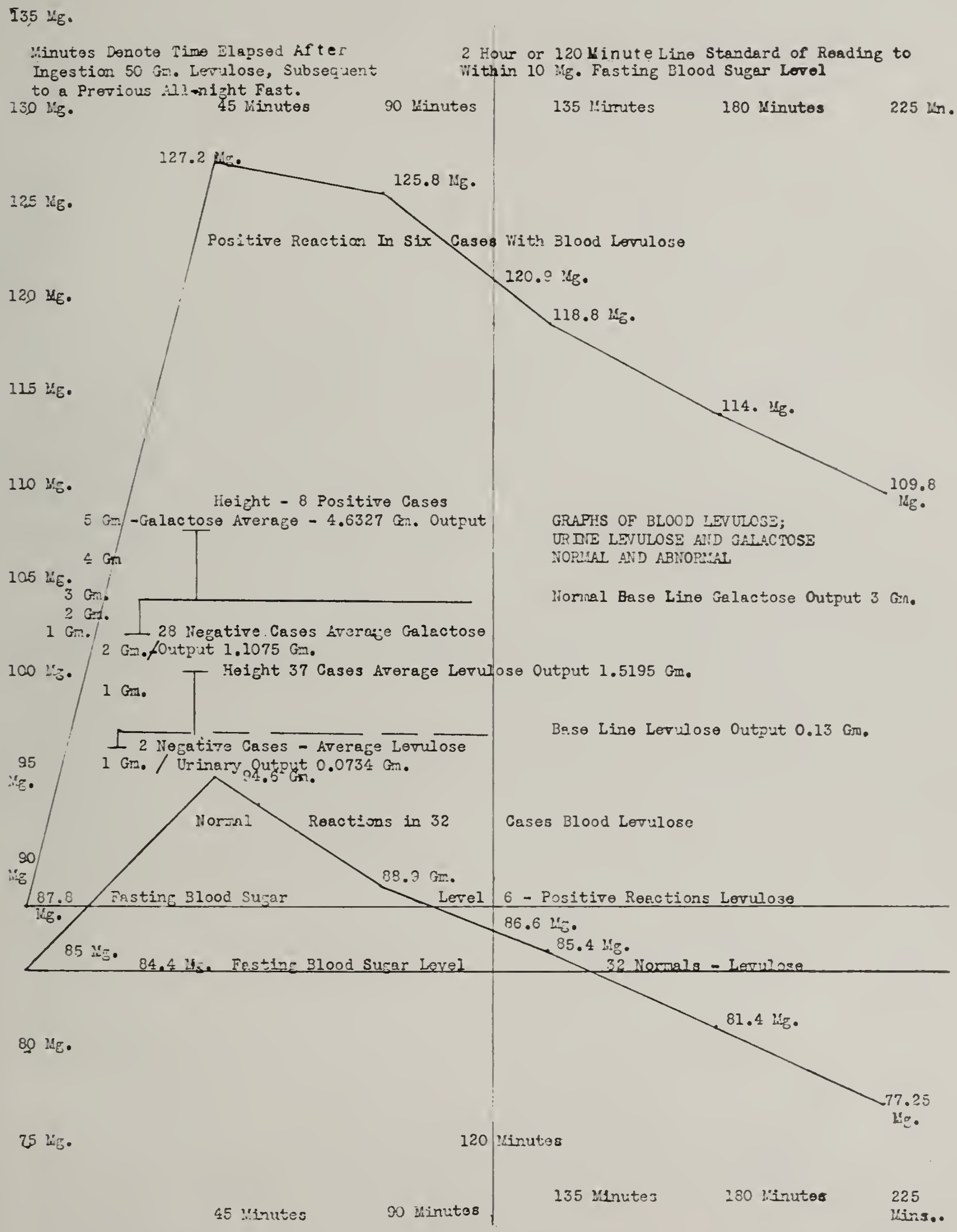
9	Chronic Constipation— Achlorhydria Possible Cholesterosis	Normal	23	0.6	14	0.081	1.4	13	0.172
10	Bilateral Striatal Disease Monoplegia Jaundice (Undetermined)	Not Obtained		0.5	4	0.02	Not Obtained		
11	Duodenal Diverticulum Gastric Hemorrhage—Acute Parotitis	L—P	41	0.5	18	0.09	0.4	48	0.192
12	Alcoholic Gastritis— Bronchial Asthma	Normal	11	0.4	61	0.244	Not Obtained		
13	Cholelithiasis	Normal	23	0.4	58	0.232	Not Obtained		
14	Rheumatic Heart Disease Mitral Insufficiency Auricular Fibrillation Syphilis—Bronchial Asthma	Normal	6	0.3	60	0.18	0.08	158	0.126
15	Hypertensive Heart Disease	Normal	4	0.3	85	0.255	0.25	49	0.123
16	Myxoedma	Normal	0	0.4	122	0.488	0.08	6	0.0048
17	Myxoedma and Umbilical Hernia	Normal	7	0.3	60	0.18	0.3	18	0.054
18	Cholelithiasis	Normal	14	0.5	12	0.06	1.3	9	0.117
19	Chronic Cholecystitis Cholelithiasis	Normal	35	0.4	96	0.384	0.3	172	0.516
20	Malarial Fever	L—P	33	0.4	28	0.112	0.4 1.0	89 26	0.356 0.262
21	Deep Thrombo—Phlebitis Left Lower Extremity Cholelithiasis	Normal	10	Unable to obtain. No voiding					
22	Coronary Disease—Bundle Branch Block	L—P	78	No Voiding. Unable to obtain			0.5	16	0.08
23	Hypertensive Heart Disease Retinal Hemorrhage—Cystitis	Normal	18	0.3	110	0.33	Unable to obtain. Patient left Hospital		
24	Diabetes Mellitus Hepatitis— Cerebral Thrombosis—Coronary Disease— Mitral Regurgitation	G—P ?	0	0.4	90	0.36	2.2	76	1.672
25	Arterio-Sclerotic—Heart Disease— Hypertension—Liver Damage	Normal	9	0.04	36	0.0144	0.4	52	0.208
26	Chronic Nephritis with Oedema	Normal	16	0.04	12	0.0048	0.5	35	0.175
27	Cholelithiasis	Normal	Not Obtained	0.6	15	0.09	0.09	37	0.333
28	Common Duct Stone	G—P	17	0.25	37	0.0925	0.5 3.0	51 42	0.255 1.26
29	Carcinoma Stomach with Metastasis with marked Gastric Retention— Arterio-Sclerotic Heart Disease	Normal	22	0.15	29	0.0435	Unable to obtain		
30	Arterio-Sclerosis—Cardio-Renal Disease with Hypertension—Syphilis —Urethral Stricture	Normal	11	0.3	126	0.378	Unable to obtain due to Urethral Stricture		
31	Cholelithiasis	Normal	25	0.4	22	0.08	0.4 1.3	105 36	0.42 0.468
32	Carcinoma of Liver—Gall Bladder filled with Bile and Pigment	G—P	26	0.5 1.2	16 76	0.08 0.912	3.2	35	1.12
33	Amebiasis	Normal	9	0.4	40	0.16	0.8	20	0.16
34	Acute Catarrhal Jaundice	Normal	29	1.4	30	0.42	0.6	24	0.14
35	Hypo-Adrenalinism—Addison's Disease	Normal	5	0.5	40	0.2	0.06	120	0.072
36	Hypertensive Cardio-Renal Disease—Syphilis—Mitral Regurgitation—Chronic Myocarditis	Normal	20	0.5	40	0.84	0.3	109	0.327
37	Chronic Cardio-Renal Disease Coronary Disease—Syphilis	Normal	19	0.3	150	0.45	0.4	140	0.056
38	Carcinoma Head of Pancreas— Obstruction of Biliary Duct	L—P	42	0.7	45	0.225	1.2	30	0.36
39	Cholelithiasis—Acute Jaundice Cholesterosis with Cholesterin Stone	L—P	32	0.3	90	0.27	0.2	200	0.4
40	Carcinoma of Liver Secondary to Colonic Carcinoma	Normal	9	0.4	32	0.128	0.6	25	0.15
41	Diffuse Goitre with Hyperplasia	G—P	Unable to obtain blood or urine				0.5 0.4	31 156	0.21 0.624
42	Exopthalmic Goitre	G—P	Unable to obtain blood or urine				0.6 1.8	37 35	0.222 0.63
43	Amebiasis	Normal	2	0.4	30	0.12	0.3	151	0.453

The graphic comparative recordance of results obtained with levulose and galactose as test media showed that:

At 45 minutes 6 positive responses to levulose estimated as blood levulose rose 39.4 mg. above the fasting level. (Average response).

At 90 minutes 6 positive cases dropped from the fastigium 1.4 mg.

At 135 minutes 6 positive cases


135 Mg.
Minutes Denote Time Elapsed After Ingestion 50 Gm. Levulose, Subsequent to a Previous All-night Fast.
2 Hour or 120 Minute Line Standard of Reading to Within 10 Mg. Fasting Blood Sugar Level
130 Mg.
45 Minutes
90 Minutes
135 Minutes
180 Minutes
225 Mn.
127.2 Mg.
125.8 Mg.
125 Mg.
Positive Reaction In Six Cases With Blood Levulose
120.9 Mg.
120 Mg.
118.8 Mg.
115 Mg.
114. Mg.
110 Mg.
109.8 Mg.
Height - 8 Positive Cases
5 Gm. -Galactose Average - 4.6327 Gm. Output
GRAPHS OF BLOOD LEVULOSE; URINE LEVULOSE AND GALACTOSE NORMAL AND ABNORMAL
4 Gm
105 Mg.
3 Gm.
2 Gm.
1 Gm.
Normal Base Line Galactose Output 3 Gm.
28 Negative Cases Average Galactose
2 Gm. Output 1.1075 Gm.
100 Mg.
Height 37 Cases Average Levulose Output 1.5195 Gm.
1 Gm.
Base Line Levulose Output 0.13 Gm.
2 Negative Cases - Average Levulose
1 Gm. Urinary Output 0.0734 Gm.
94.6 Gm.
95 Mg.
Normal Reactions in 32 Cases Blood Levulose
90 Mg
88.9 Gm.
87.8 Mg.
Fasting Blood Sugar Level
6 - Positive Reactions Levulose
86.6 Mg.
85 Mg.
85.4 Mg.
84.4 Mg. Fasting Blood Sugar Level
32 Normals - Levulose
81.4 Mg.
80 Mg.
77.25 Mg.
75 Mg.
120 Minutes
45 Minutes
90 Minutes
135 Minutes
180 Minutes
225 Mins..

dropped from 90 min. level 6.2 mg.

At 180 minutes 6 positive cases dropped from 135 min. level 4.8 mg.

At 225 minutes 6 positive cases dropped from 180 min. level 5.2 mg. and remained 22 mg. above the fasting blood sugar level of 87.8 mg.

In contrast to the above linearly depicted rise and fall in blood levulose by 6 positive reactors—32—normals rose ten and two-tenths mg. from a fasting blood sugar level of 84.4 mg. to a level of 94.6 mg. at the end of the first 45 minutes, at 90 minutes the fall (from the fastigium attained in excursus subsequent to ingestion of 50 mg. of levulose), was 5.7 mg. to a level of 88.9 mg. At 135 minutes the curves (average) dropped 4.5 mg. to 85.4 mg. or to within 1 mg. of the fasting blood sugar, but at 120 minutes, the limit of observation of Tallerman, Joliffe and Kendall, the blood sugar curve reached a level of 86.6 mg. or at a level but 2.6 mg. above the fasting blood sugar, which is in agreement with their views as to normal reaction. At 180 minutes a drop from 85.4 mg. to a level of 81.4 mg. or of 4 mg. had occurred. At 225 minutes, or the end of period of observation, the blood levulose level was 77.25 mg., a drop of 4.15 mg. from the 180 minute level, or 7.15 mg. below the fasting blood sugar level.

The average galactose elevation in 8 positive cases above the 3 gm. output line was 1.6327 gm. to a level of 4.6327 gm. total output, while the negative responses in 28 cases showed a total output of but 1.1075 gm.

The average levulosuric output in 37 positive cases was 1.5195 gm. and in the 2 negative reactions was 0.0734 total gm. output.

RESULTS

I. The contrastively portrayed tabulations of tables Nos. I, II, IV, V and VI are sufficiently apparent as to necessitate no further elucidation.

II. The depiction of Table No. VII solely illustrates the non-dependability of the levulosuric findings relative to per cent, cubic centimeters of output and gm. total output as indicative of decreased hepatic glycogen function, as in only two of the forty-three cases tested was the output below 0.13 gm.

CONCLUSIONS

I. A dose of fifty (50) gm. of levulose or forty (40) gm. of galactose after an overnight fast, is, in each instance, adequate to effect a valid variation of blood levulose and urine galactose portrayal as compared to the excursus evinced by the blood and urine of normals, after a similar ingested dose of each.

II. From Table V the incidence of positivity of levulose or galactose alone is as five (5) is to seven (7). In addition galactose, manifests three questionably positive reactions, which if added to the antecedent seven, would render the comparative positivity as five (5) is to ten (10), or as one (1) is to two (2). The case number twenty-four diagnosis diabetes mellitus presenting a galactosuria of 6.98 gm. output with a negative blood levulose was discarded from consideration because the reactions were not dependable, owing to the perversion of carbohydrate action by the disease entity evinced.

III. Table VI portrays an equal decrease in hepatic glycogen function by both tests, and is the only case with duality of reaction by investigative agents.

IV. Unexpectedly positive evidences of mitigation of hepatic glycogen function were evinced in Cases Nos. II, VII, XLI and XLII, with galactose as a research agent; and in Case No. XI with levulose as the test sugar.

V. There seems to be no parallelism in reaction between levulose or galactose as test sugars, in any case or type of case save that manifested in Case No. 3, Table VI.

Therefore, it is concluded that in estimating the degree of impairment of hepatic glycogen function of any patient, should one test be negative, it becomes imperative to perform the other, but if one is positive, exhibition of the second is non-essential.

VI. Comparatively, the galactose test presents the greater ease of performance, as it is easier to collect urinary output hourly, than to effect numerous blood extractions, both from the point of time consumed and discomfort experienced by the patient; and, since each separate specimen examined subsequent to the ingestion of galactose, showed the presence of this sugar, all specimens, after the fasting one, can be estimated for galactose content from a total admixed specimen, thus saving much time in estimating the total gm. output.

Arrayed against such is the probably greater exactitude of blood levulose determinations as contrasted with the fact that the elimination of urine may not be expressive of the complete evacuation of the patient's bladder.

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CANCER COMMENT

Malignant Tumors of the Thyroid

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Although cancer of the thyroid is seen relatively rarely by physicians in general practice, it is found fairly frequently in clinics at which numerous patients with thyroid disease are treated. Lahey, [S. G. & O., **56**, 418, (Feb. 15), 1933] reports an incidence of 2.86% in 6,535 patients operated upon for thyroid disease at the Lahey Clinic, while 1.2% to 10% has been quoted by various other authors. There seems to be a definitely higher incidence in the so-called goitrous areas.

About twice as many women as men are affected. This corresponds to the sex ratio in endemic goitre. The majority of cases are found in persons in the fifth decade of life.

The clinical differentiation between malignant and benign tumors of the thyroid is extremely difficult and in most cases impossible. There are relatively few clinical findings by which early malignancy of the thyroid can be detected, although marked firmness and fixation of an adenoma or sudden rapid growth of a tumor of long standing should be regarded as a very suggestive symptom. The prophylactic measure of removing adenomas while they are benign is the one hope for clinical control of this condition, since statistics show that nearly 80% of the malignancies arise in pre-existing adenomas.

The careful pathological examination of all tissue removed at operation plays a very important part in the diagnosis. Six per cent of the supposedly benign adenomas examined at the Lahey Clinic showed malignant changes.

Cases which are not recognizable clinically but are diagnosed by the pathologist after the removal of presumably benign adenomas are most amenable to therapy. In these cases, where the entire tumor has been removed surgically, the prognosis is very favorable.

Since malignant growths of the thyroid show a peculiar tendency to produce distant metastases by extending through and into the blood vessels, many operators advise the use of the electric cutting current for removing these growths, contending that the blood vessels are sealed at the time of removal, thus eliminating this danger. The tendency to spread in this manner has prevented several authors from removing biopsies for diagnosis, but others claim that if the cautery is used there is no appreciable difference in the prognosis. Statistics regarding these opinions are not convincing.

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*Secretary-technician, Delaware Tumor Clinics.

The clinically, frankly malignant thyroid tumor usually carries with it a prognosis of early death. In these cases radium and x-rays have proved very beneficial as palliative treatment, and among a comparatively small group of patients studied there is a report of cures of 10% of a series of cases considered primarily inoperable. Surgical intervention offers little aid in the rapidly growing and extending types and an early recurrence can be expected if this form of treatment is used.

These tumors simulate tumors of the breast and prostate in their predilection for metastasis to bone—Levin (Amer. Jour. Path., 6,563, 1930) urges that the thyroid be considered along with the breast or prostate in attempting to locate the primary site in patients with extensive metastatic bone involvement of unknown origin. Metastatic lesions in the lung, adrenal, ovary, and brain have been reported.

There are five cases of malignant thyroid disease in the files of the Delaware Tumor Clinics. The first: a white female, aged 55 years, had a swelling of the neck with cough and nervousness in 1931. At this time the basal rate was normal. A subtotal thyroidectomy was done and a diagnosis of adenocarcinoma was made. The patient remained well for about two and one-half years and then developed metastases to the abdominal cavity and cervical lymph nodes. A biopsy of a cervical node was diagnosed as adenocarcinoma, metastatic from the thyroid, at this time.

The second, a white male, aged 47 years, had noticed a slight swelling of the neck for a long period of time, but this had given him no trouble until six weeks previous to the time when he presented himself at the tumor clinic. The swelling had been increasing rapidly during this time and had been aspirated twice with no results. On examination a firm mass 8 cm. in diameter was found over the lower pole of the thyroid. This moved with swallowing. The skin was red and shiny, but there was no ulceration. The patient complained of cough and choking sensation, loss of twenty pounds weight in six weeks, and had a basal rate of +49. X-ray showed numerous metastatic nodules in the lungs. A cycle of x-ray therapy to the tumor and lungs was started, but because of the critical condition of the patient this was discontinued after two treatments, and the patient expired two days later or three months from the time of noticeably rapid growth of the tumor. A partial necropsy was performed and a diagnosis of neurogenic sarcoma made.

The third, a white female, aged 44 years, had been advised "not to bother" with a lump in the right side of her neck, first noticed three years previous to admission for surgery. A slightly nodular mass was removed and a diagnosis of carcinoma of the thyroid made. Two cycles of x-ray therapy were given; the first one month post-operative, and the second one year later, when a small nodule appeared near the scar. The patient presents no symptoms at this time, four years after the first symptom.

The fourth, a white female, aged 52 years, presented sudden symptoms of hyperthyroidism eleven months previous to first lobectomy. Five months later the remaining lobe was removed and an unsuspected carcinoma 1 cm. in diameter was found embedded in the hyperplastic thyroid tissue. At this time, almost two years from the date of operation, the patient is still living. No irradiation treatment has been given. The site of the tumor is hard and irregular, giving the appearance of an enlarged thyroid. X-ray irradiation will be tried for palliative effect.

The fifth, a white female, aged 34 years, gave a history of enlargement of the thyroid with a basal rate of +57 ten years previous to subtotal thyroidectomy at which time a diagnosis of benign adenoma was made. Symptoms had been severe only at menstrual periods and during pregnancy. Because of a persistent mass in spite of basal rate of +5 an incision was made and 20 grams of tissue removed. A diagnosis of slowly growing carcinoma of the thyroid was made. A cycle of x-ray treatment consisting of 3500 r to the neck, given over a period of four weeks, was completed less than eight weeks after removal of the tumor, and another cycle will be given after the skin reaction has entirely subsided.

EDITORIAL

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Dover in Retrospect

The one hundred and forty-fifth annual session of the Medical Society of Delaware has passed into the record of things accomplished. It was in every sense a very successful meeting. In the first place, the work required of the House of Delegates was minimal, was put through with neatness and dispatch, and was characterized by an exceptional degree of harmony.

In the second place, the scientific meetings were very well attended, the papers were of better than average quality, the discussions showed liberality without verbosity, and once again we can record a one hundred per cent attendance of the speakers scheduled to appear.

In the third place, the general public meeting was a success, despite the facts that it was held in a down-state town and was arranged for on relatively short notice. The guest speakers at this meeting presented unusually interesting addresses.

Finally, the social functions and general atmosphere were extremely pleasant and enjoyable. The officers and committees responsible for the session are to be congratulated. The physicians who attended—two-thirds of our whole membership—rendered themselves a profitable service.

The Chicago Conference

The annual conference of secretaries of the state medical societies and editors of the state medical journals, under the auspices of the home office of the American Medical Association, was held at the Palmer House, Chicago, September 21 and 22, 1934. Dr. Robert L. Parker, of Des Moines, was elected chairman. A varied, interesting and instructive program was presented, as follows:

Call to Order. J. H. J. Upham, Chairman of the Board of Trustees of the American Medical Association.

The Medical Society of New Jersey Experiments in Furnishing Medical Services in the Community. LeRoy A. Wilkes, Executive Secretary of the Medical Society of New Jersey.

The Centralization and Departmentalization of State Medical Society Activities. Oliver J. Fay, Chairman of the Board of Trustees of the Iowa State Medical Society.

The Work of the Committee on Mental Health. H. Douglas Singer, Chairman of the Committee on Mental Health of the American Medical Association.

Address. James S. McLester, President-elect of the American Medical Association.

Medical Emergency Relief. Holman Taylor, Secretary of the State Medical Association of Texas; William C. Woodward, Director of the Bureau of Legal Medicine and Legislation of the American Medical Association.

Some Problems of a State Medical Editor. W. Edwin Bird, editor of the Delaware State Medical Journal.

Address. R. L. Sensenich, member of the Committee on Legislative Activities of the American Medical Association.

The Educational Possibilities of Scientific Programs at State and County Meetings. Clyde L. Cummer, President of the Ohio State Medical Association.

Health Insurance in England and Medical Plans in the United States. R. G. Leland, Director of the Bureau of Medical Economics of the American Medical Association.

Since these papers will be published in the *Bulletin of the A. M. A.* we shall refrain from comment at this time, except to say that it is apparent that the A. M. A. headquarters is on its toes and is functioning indefatigably in the interests of the profession. Incidentally, in connection with the Doctors Decalogue, adopted at the Cleveland convention last June, it was pointed out that at least three county medical societies (Alameda and San Diego Counties, California, and Wayne County, Michigan) have evolved plans for the care of the indigent and small income classes that surpass any of the compulsory health insurance plans of Europe. Every physician should digest these new plans, for which see the *Journal of the A. M. A.*, September 8, 22, and 29, 1934.

For the benefit of those meticulous souls who want to do things just so we would offer the reminder that there is no such organization as the "Delaware State Medical Society." For the 145 years that the profession of this state has been organized its only legal and correct name has been the "Medical Society of Delaware."

Again we make a plea for hospital news and items that concern the profession. As compared with the other state journals we are pointedly deficient in this respect.

The Woman's Auxiliary to the A. M. A. now issues their *News-Letter* as a quarterly instead of a monthly. We are frank to state we miss the monthly; we wish they could find their way clear to go back to the monthly, even though it be reduced in size. The news then comes fresher, and we can use more of it. We would like to give the Auxiliary a full page each issue, and the local news rarely provides that much.

Don't forget the International Medical Assembly to be held in the Municipal Auditorium, Philadelphia, the week of November 5th. Next to the annual convention of the A. M. A. itself, this Assembly is the largest medical meeting in the world. A splendid program has been prepared with, as always, the emphasis placed on practical instruction. With such a meeting so near to us, we hope many Delaware physicians will avail themselves of the opportunity to attend.

MISCELLANEOUS

International Assembly

The first International Assembly of the Inter-State Post-Graduate Medical Association of North America to be held east of the Alleghenies is to take place in the Public Auditorium of Philadelphia, Pennsylvania, November 5th, 6th, 7th, 8th and 9th, 1934, with pre-Assembly clinics on November 3rd and post-Assembly clinics on November 10th in the Philadelphia hospitals.

The Public Auditorium is located in the University area and across the street from the Philadelphia General Hospital, thus assuring the Assembly close access to tne abundance of clinical material.

The aim of the program committee, with Dr. George W. Crile, as chairman, is to provide for the medical profession of North America an intensive post-graduate course covering the various branches of medical science. The program has been carefully arranged to meet the demands of the general practitioner as well as the specialist. Extreme care has been given in the selection of the contributors and the subjects of their contributions.

The Philadelphia County Medical Society will be host to the Assembly and has arranged an excellent list of committees that will function throughout the Assembly. A most hearty invitation is extended to all members of the profession who are in good standing in their State society to be present and enjoy the hospitality of Philadelphia, "The City of Brotherly Love." The list of distinguished teachers and clinicians who are taking part on the program was published last month of the advertising section of The Journal. Special reduced railroad rates will be in effect on all lines.

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ACQUIRED EXTERNAL FECAL FISTULAE INVOLVING THE ANTERIOR OR LATERAL ABDOMINAL WALL

Aime Paul Heinick, M. D.
Chicago, Ill.

A fistula is an abnormal channel of communication existing between two hollow viscera, or between a viscus and the surface of the body. Fistulae are congenital or acquired: the latter being pathological, traumatic, or post-operative. By some clinicians fistulae are classified according to their anatomical location, as duodenal, intestinal, colonic, etc.; by others according to the nature of their discharge, as salivary, urinary, fecal, etc. The acquired post-operative fistulae discussed in this paper, we designate as external, because they have an outlet on the surface of the body; as fecal, because they communicate with the alimentary canal and discharge intestinal secretions and feces. They are all fistulae of the small or large intestine, no segment of the alimentary canal between the duodenum and the anus being immune. (Mayo, Christopher.) Such abnormal communications between the lumen of the gut and the abdominal wall as are created deliberately or established intentionally by the surgeon, to put a gut-segment at rest, to drain the bowel, to introduce fluids and nourishment, to relieve intestinal obstruction, will receive nothing more than passing mention in this paper.

Most of the external abdominal fistulae herein considered are post-operative in occurrence. A few occurred spontaneously, resulting from some abdominal lesion, such as a localized abscess secondary to a perforating gastric or duodenal ulcer, to a suppurative appendicitis in which operation had been unduly delayed, to a malignant disease of the intestine, etc. Fecal fistulae are most depressing and demoralizing to patients, such patients being prone to exaggerate to themselves their more or less fancied repulsiveness. A fecal fistula is often a most formidable and difficult condition to overcome, taxing to the utmost the ingenuity of the medical attendant and demanding the best surgical talent available. Owing to lack of adequate rest from the associated discomfort and to the quantity of nourishment lost by food escaping from the fistulous opening, these patients lose in weight. They soon learn that food-taking is followed by increased pain and discomfort consequent to the increased escape from the fistula of irritating bowel contents.

Fistulae are grouped as internal, external, or combined. The external include all cases in which the fistulous tract or tracts discharge either by one, two or more openings on the external surface of the body; the internal in which there is an abnormal communication between the lumina of two or more hollow viscera, that is those in which the fistulous tract has only internal outlets; the combined, in which the fistulous tract not only establishes a communication between two hollow viscera, but also has an external opening either in the vagina, the abdominal wall or elsewhere. The discharge may be intermittent or continuous; may be scant, moderate or profuse; may be gas alone; may consist of bile, pancreatic juice or intestinal contents. In 1923, I reported a case of intestinal fistula following a cholecystostomy in which tapeworm segments were expelled through the fistulous opening. I have since seen two similar cases. (Heineck).

The external orifice, rarely mucous membrane, almost always cutaneous, is surrounded by an excoriated, ulcerated, painful and often partially digested area due to the irritation of bile, pancreatic secretion and partly digested intestinal contents. The greater the fluid content of the discharge, the more irritating. Often the nature of the discharge enables one to determine readily the site of the internal orifice or orifices of the fistulae. The external orifice may be large, may be small, may be pin-head in size. In fistulae secondary to diverticulitis the opening may not be larger than a knitting needle.

Determine the character, size and location of the inner fistular orifice, and the approximate length, course, chronicity, tortuosity, ramifications and nature of the fistulous tract by taking an x-ray picture of the fistular region after ingestion of a barium meal and injection of a barium enema, supplemented by the injection in the fistulous tract of an opaque medium. An opaque catheter inserted in the fistula may prove serviceable. Administration of aniline dyes in the food or per rectum, and their subsequent appearance in the fistulous discharges further establishes the diagnosis. Exclude the presence of a sinus infected with colon bacilli and giving rise to drainage resembling fecal material. Aniline dyes will aid you in these cases.

Fistulae connected with some part of the ascending, transverse or descending colon are uncommon, and the discharge that accompanies them is less liquid and usually less irritating. Mayo reports a case of fecal fistula developing after an appendectomy. This fistula had remained unclosed for fifteen months, it had two internal colonic openings, one on the hepatic flexure, the other in the transverse colon. It was closed permanently by bringing the two openings close together and closing them. External cecal fistula, the result of operations for appendicitis is by far the most common type of fecal fistula of the colon. Of 264 cases of fecal fistula observed at the Mayo clinic, over one-third, ninety-eight cases, were shown by Rankin and Gorder to be due to appendicitis, acute, gangrenous, or pus-producing. (Rankin, etc.)

Fistulae may have a sinuous course. The internal and external orifices, or both, may be single, double or multiple. These orifices vary in size and in outline. In some cases, the mucous membrane of the gut is adherent to the skin; in many, a fibrous tract or sinus connects the gut with the skin openings; while in others, the gut opens into an abscess cavity connected with the surface. In cases due to trauma, as in gun-shot wounds, the fecal fistula may be complicated by hemorrhage, by compound fracture, etc.

Etiology

Fistulae occur at all ages and in both sexes, and in connection with various abdominal lesions, as from the spontaneous rupture or the surgical evacuation through the abdominal wall of a localized abscess resulting:

1. From a perforating or perforated duodenal or gastric ulcer.

2. From the rarer types of perforating ulcer of the alimentary canal: typhoid, tubercular, dysenteric, carcinomatous, etc.

3. From an infected appendix for which surgical relief has been unduly delayed. Deaver reports 200 cases of fecal fistulae developing in 4,063 cases of acute appendicitis. This represents 5 per cent. Pus was present in varying amounts in every case in this series, and required drainage. In a large percentage of these cases, ulceration of the caecum or terminal ileum had been observed during the primary appendectomy operation. It is generally admitted that cases with a perforation at the base of the appendix show a definite tendency to the development of fecal fistula.

Gibson in 1,583 cases of appendicitis found 19 cases of fecal fistulae, 1.3 per cent. Muhsam analyzed 1,256 operations for appendicitis. In the first 441 cases, there were 78 fecal fistulae; in the last 815, there were only 54. In 2,841 consecutive cases of acute appendicitis treated at the Mount Sinai Hospital, N. Y., 1.1% developed fecal fistulae. It is most frequently seen in cases of acute gangrenous appendicitis with perforation or abscess in which the cecal or ileal walls are involved in the inflammatory process, but it may be due to poor surgical procedures. (Colp.)

4. From a localized infection in close proximity to some intestinal loop, when the purulent material is not promptly evacuated by the surgeon.

5. From malignant disease of the intestines: caecum, colon, sigmoid, etc.

6. From strangulated intestinal hernia, irrespective of anatomical type or location, W. D. Haggard says that a small percentage of cases of strangulated hernia, *not operated upon*, will recover with a fecal fistula and artificial anus. He reports 5 such cases; 4 were in women; 1 in a boy of six. Three of the hernias were femoral, two inguinal; two ruptured spontaneously; three were opened for abscess; all drained fecal matter. All patients recovered, following operative treatment of the fistula.

7. From diverticulitis, "The abdominal wall is very rarely perforated by infection. Such a condition, however, accounts for a small percentage of the cases in which fistulae occur in the lower abdomen, secondary to diverticulitis." Mayo.

8. From accidental or operative injury to the abdominal wall and abdominal viscera: penetrating and perforating stab and gunshot wounds in military and civil life. P. Lockhardt-Mummery reports among other interesting cases of fecal fistulae one in which there were two internal fistulous openings, the upper one in the jejunum (fecal), the lower one in the bladder and ileum, urine and feces escaping from it. Fistulae have followed operations for intestinal obstruction, (volvulus [Constantini]), and for pelvic infections in the female.

Fecal fistulae have followed the slipping of improperly placed, carelessly applied sutures; have also followed the premature absorption of catgut or other suture material. Minimize the incidence of these mishaps by encircling the base of the appendix with a ligature that penetrates but does not perforate the appendiceal wall. Supplement this litigation by a few catgut stitches that enfold and bury the appendiceal stump in a small caecal pouch.

A large number of the fecal fistulae that have come under my care occurred after abdominal operations performed on patients that had, at some previous date, been laparotomized. These were accidents of commission; the over-confident operator in opening the abdomen had carried his incision into a loop of gut adherent to the abdominal wall either at the incisional scar or close to it. Another condition met with in reopening abdomens in the presence of adhesions, inflammatory in nature, binding loops of gut to one another or parietal peritoneum. In separating these adhesions, the intestinal serosa is frequently injured, the gut may be perforated or torn, and if not suitably repaired a fecal fistula may result. We have seen cases due to this cause and have successfully treated a number of them by the method hereinafter described.

Treatment

Many fecal fistulae are operative or postoperative in origin and are due to errors of commission or omission on the part of the surgeon. (Erdmann). A careful study of the etiological factors previously enumerated leads one to conclude that the incidence of fecal fistulae can be much lessened:

a. By timely operative relief of all abdominal conditions that call for surgical intervention. The diagnosis being established, or better, the indication for operative relief being present, do not delay. Among the unfortunate sequelae of appendicitis fecal fistulae occupies the first place. (Baldwin). Howard A. Kelly quotes few surgeons as having respectively 3.5%, 5%, 18%, and 0.6% of fistulae in their appendectomies. For appedicitis, ectopic pregnancy, intra-abdominal pus collections, strangulated hernias, perforations of the intestines irrespective of type or location, immediate operative relief is imperative.

b. By avoiding hurried operating, and undue haste. It is not that operations should be prolonged but they should be performed in the shortest possible time consistent with safety, accuracy and thoroughness. In pelvic surgery, the danger of perforating the gut should lead one to be most gentle in the separation of adhesions and to avoid rough surgical manipulations.

c. By securing a good exposure of the operative field, employing incisions adequate in length, having proper illumination, discarding silk suture material and by being most careful to avoid needless and rough handling of inflamed intestines. Sloughing of a portion of gangrenous cecum is not an uncommon factor in producing fecal fistula; hence, in operating upon patients with acute gangrenous appendicitis, intestinal obstruction, etc., the intestines, especially the cecum, should be approached and handled with great care. The same precaution must be observed in operating upon a strangulated hernia. Crile advises that no gauze or drain be left in contact with the cecum. Avoid silk as ligature or suture material.

d. By separating and dividing inflammatory abdominal adhesions, with care and great gentleness, and by peritonizing, when possible, all denuded or eroded gut surfaces.

e. By endeavoring to prevent such relatively avoidable accidents as slipping of ligatures, premature absorption of sutures, erosions of the gut due to improperly applied, faulty, rigid, or prolonged drainage, improper closure of perforations of the intestine, and especially by being careful in opening the abdominal wall. This latter accident most frequently occurs in operating on patients that have been previously laparotomized. Therefore, in abdominal sections, be most careful in incising the parietal peritoneum.

f. By not attaching a loop of gut to, or enclosing it in, the abdominal wall, by the sutures that close the latter.

Actual treatment of the fistula with the view to permanent cure is of two kinds: operative and non-operative. To intelligently treat one of these cases it is well to have a detailed knowledge of the characteristics of the case at hand. These being known, one can more judiciously select the appropriate line of treatment. All methods count successes and register failures. This is confirmed by the experience of all clinicians.

As about eighty per cent of these fistulae heal spontaneously, one resorts to their operative closure only after the patient and long-continued employment of accepted methods of non-operative treatment have proven unsuccessful. If the patient receives adequate nourishment, if he does not show signs of malnutrition, opportunity should be given for spontaneous healing, and operation deferred. Conservative methods are so frequently attended by success that in the absence of urgency, one should wait several months before proposing a radical operation. Prolonged conservative treatment in these cases has the advantage that during the preoperative period, much if not all, of the inflammatory thickening, infiltration and edema of the mesentery disappears, and thus the latter thereby regains much if not all of its normal flexibility.

The type of fistula in which the fistulous opening comes to the parietal peritoneum without an intervening cavity gives the most unfavorable prognosis. The higher the leak, the more serious it is. A fistula high up in the small intestines may cause death from inanition, therefore such fistulae call for early surgical relief. Other factors influencing the prognosis are the resistance of the patient, but the volume of pancreatic juice in the intestinal secretion, the intra-intestinal pressure, the persistence and thoroughness of treatment, etc.

In Deaver's series, 73 (37%) of the fistulae healed spontaneously, 97 cases (48.5%) required operative repair; 29 patients refused operation. The longest duration of a fecal fistula in Deaver's series without operative relief was seven years. In 60% of the cases simple inversion of the fistulous intestinal opening by a purse string of catgut suture, reinforced by an additional suture line was all the surgery necessary. Fifteen per cent required an ileocolostomy to short-circuit the affected bowel. Twenty-three per cent (23%) presented multiple fistulae or a very large fistular opening which could not be treated by simple surgery. Eighty of the 97 operated cases were discharged perfectly healed.

The following non-operative method of treatment has proven most successful in our hands and we feel that it deserves extended use. A morning and evening enema sufficient in volume to not quite fill that portion of the gut distal to or below the fistular opening, thereby, the voiding of the intestinal contents is assisted through the natural channels, the fistular discharges minimized, the irritation of the skin lessened. We have not felt the necessity in cases of this nature to limit the patient to liquid foods. On the contrary, we urge that the patient partake of a generous and substanial soft diet as it is of the greatest importance that his strength be maintained.

Protection of the skin area surrounding the external fistulous opening and also of the fistulous crater with gauze saturated with 10% peptone solution. Be careful to not plug the fistulous tract. To neutralize the alkalinity of the intestinal juice inject at least three times daily, oftener if feasible, in the fistulous tract a deci-normal solution of hydrochloric acid. We have found a 10% peptone solution protective and soothing to the excoriated skin surface. It is important that the dressing be frequently changed. If the skin be non-protected by this or a similar solution it is macerated by the irritative and destructive action of the intestinal juices.

The preliminary preparation of an undernourished patient with fecal fistula is most important because the operation may and often does resolve itself into a major operation. One should always ascertain that there is no bowel obstruction distal to the site of the fistular opening. One of the most annoying features of a cecal and in fact of all fecal fistulae is an excoriation of the skin productive of masses of granulation tissue surrounding the opening on the abdominal wall. Frequently, the entire side of the abdomen is found in this painful state. This condition of the skin makes closure difficult. Highly satisfactory results frequently attend the combined employment of a soothing ointment spread over the involved area and a water-suction pump connected to a catheter with several added openings, the tip of which is inserted into the fistulous tract as far as possible. This continuous suction markedly lessens the overflow over the abdominal wall of irritating fluids. The intestinal juices quickly permeate, and undermine any layer of ointment, paste or parafine.

When conservative measures have been faithfully and intelligently tried and proven unsuccessful operative measures are in order. The careful preliminary preparation of the abdominal skin and of the patient contributes to the successful outcome of the various operative measures employed. Usually, the closure of these fistulae is obtained by a simple operative procedure, but at times relief is effected only by means of a complicated operative intervention. See that your patient's resistance is at its best.

As a preparatory step to permanent closure of the fistula carefully aseptisize the area of the abdominal wall surrounding the external orifice. Suture this orifice so as to prevent leakage of intestinal contents into the peritoneal cavity. Some operators open the abdomnal wall by an incision to the side of and well away from the fistulous opening; others circumscribe freely by two elliptical incisions the perforated zone. With the parts well exposed, completely free the gut and fistula in one piece. Resect the fistulous tract. If the opening in the gut be small, invert it and suture the intestine along its transverse axis, to avoid the narrowing of the channel. A double line of suture is advisable to avoid leakage and to obviate the dangers incident to premature detachment and absorption of sutures.

In Rankin and Gorder's series of 264 cases of fecal fistulae, the following 379 operations were performed. There were 27 deaths; peritonitis 116; broncho-pneumonia and inanition 3; vesico-intestinal fistula 8.

Simple closure	189
Resection	60
Colostomy	22
Ileoclostomy	11
Ileosigmoidostomy	3
Cecosigmoidostomy	1
Colocostomy	2
Cecostomy	1
Ileostomy	11
Appendicostomy	1
Lateral anastomosis of loops of bowel (ileum)	8
Closure of colostomy	6
Dilataton and curetment of sinus tract	35
Incision and drainage of sinus tract	9
Excision and drainage of sinus tract	4
Dilatation and drainage of sinus tract	1
Incision and dilatation of sinus tract	2
Irrigation of sinus tract	5
Exploration	8
Total	379

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ACUTE CORONARY THROMBOSIS*

Olin S. Allen, M. D.
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History

When one reviews the past history of heart disease it is rather surprising to find what slow progress has been made in the study of the cardio-vascular system in the last two centuries. The heart was first described by Aristotle and his pupils about 350 B. C. Their conception of the heart was that it was the seat of intelligence and that it was composed of three chambers. They also thought the arteries contained air instead of blood.

About 500 years later Galen and Hippocrates conceived the idea that the heart was a sort of pump, causing the ebb and flow of mingled blood with the vital spirits of the arteries. After these two crude and rather unimpressive observations we do not find anything of note along this line of thought until the early part of the 17th century when Harvey discovered that the blood actually circulated in the heart and blood vessels. This was a real step forward. About 50 years later, or the middle of the 17th century, John Hunter and his assistants were the first to demonstrate a thrombus in one of the coronary arteries at post mortem. Curiously enough, it is said that John Hunter suffered from anginal attacks similar to the attacks which the patient upon whom he and his assistants had done the post mortem and for this reason would not permit an examination of his own heart to be made, fearing the same condition would be found in his own case. After the fatal attack of angina pectoris had come upon him, coronary thrombosis was proven the cause of his death at the autopsy. This demonstration is the first known case of coronary thrombosis recorded in the history of medicine. Following this there does not seem to have been much progress made until about the latter part of the 18th century when Mackenzie developed the polygraph in the early 80's. Through his work with the polygraph he was able to demonstrate many heart lesions. It was from Mackenzie's pioneer work with the polygraph that Einthevohen of Holland and Thomas Lewis of London developed the electric cardiograph at the beginning of the 19th century, and through the work of the electric cardiograph we have been able to diagnose graphically a block of one of the coronary arteries. Herrick was the first to recognize acute coronary thrombosis clinically, back in 1912 and 1913. Parde is credited with being one of the first to recognize it cardiographically, and his work was corroborated by Barnes and Willis and many others.

It might be well here to mention one of the reasons that so many negative cardiograms are gotten following an attack of acute chest pain, supposedly acute coronary thrombosis, is the time element. Many cardiograms are not taken for several days after the initial attack, at which time the heart has had a chance to recover from its original shock by collateral circulation, and the collateral circulation may be so well established that the cardiogram is normal, so the history here in this type of case is most essential. Consequently, if one were able to get a cardiogram during the attack or immediately following we would have many more positive coronary waves than we have at the present time. It is now pretty well known that the heart frequently returns to normal within 48 to 72 hours after its initial obstruction, nevertheless we are hopeful that we will be able to pick up some of these infarcted areas by the direct lead in the future that are not obtained at the present time by the other three leads. For several years there has been more or less controversy about the existency of coronary accident in its acute stage. Some men have gone so far as to say they did not believe it occurred, but I believe at the present time the majority of medical men who have had any experience along this line agree that it not only occurs but is usually recognized.

Undoubtedly there are death certificates signed as apoplexy and acute indigestion when in reality it is acute coronary accident. It was not at all unusual a few years ago to pick up the morning paper and see where Mr. So-and-So had spoken at a dinner the night before and a couple of hours later was seized with chest pain and died of acute indigestion. No one at the present time would believe this, for we all know acute indigestion does occur, but as far as we are able to ascertain it has never killed anyone with a normal heart. Furthermore, we do not know of any diagnosis that is so overworked in the medical nomenclature as indigestion, gastritis and the like, though not as much now as formerly.

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*Read before the Cecil County Medical Society, Elkton, Maryland, December 14, 1933.

Etiology

No one knows the etiology of acute coronary thrombosis, but the following factors seem to play some part in its production: Arteriosclerosis; hypertension diastolic; mental worry and nervous strain; diet, only from a mechanical standpoint.

Sex

Males are more frequently affected than the females. In this series of one hundred cases there were six males to one female, or eighty-four males to sixteen females.

Race

No race seems to be immune against coronary disease of the acute character; it is uncommon in the Negro race, especially in the female, but does occur occasionally in the male sex.

Occupation

Undoubtedly the high pace we are all going at present plays a large part in the development of this disease. Frankly, we believe mental and nervous strain with large responsibilities plays a far greater part in the development of this condition than all the diseases mankind falls heir to.

Pain and Its Location

Some patients complain of the pain being retro-sternal, others epigastric, other precordial, and still others complain of abdominal pain, especially in the epigastric region or above the umbilicus, rarely ever below. Some describe it as a continued ache, while others describe it as a tightening sensation or a sense of oppression, while still others describe it as a constriction-like sensation similar to a heavy weight on the chest.

It might be well here to add a word of warning to not be misled by the so-called "gas pain." About 90% of these patients with cardiac affection complain of gas in the stomach and frequently they will tell you they have no pain associated. However, on further inquiry one will find that they have a constriction-like sensation in the chest, an oppressive feeling, or a tightening and shortness of breath, associated with the so-called "gas pain." Most likely when these elements are present it is cardiac in origin. On the other hand, if one can satisfy himself that there is neither pain nor dyspnea associated with the gas then in all probability it is not cardiac in origin.

Types

There are three types: all pain and no dyspnea, (small group); all dyspnea and no pain, (few); a combination of the above with both pain and dyspnea, (largest group).

Dyspnea

Most cases have some shortness of breath during the attack, although some patients do not realize the dyspnea for the reason that the pain is so severe that the dyspnea goes unnoticed. Although frequently one runs into cases that give absolutely no history of shortness of breath during the attack or during convalescence, in the majority of cases there is more or less dyspnea. In the small group of cases which have no pain and all dyspnea, the dyspnea is usually exaggerated.

Heart Size

There is no doubt that the heart size plays a very important part, not only in the diagnosis of acute coronary thrombosis, but especially in the prognosis, for it is not unusual to find a normal sized heart in this condition, as far as we are able to tell clinically. We heartily agree with Lewis and Robinson in that the prognosis can be prophesied to some extent on the heart size, especially in coronary accident. The cases that do not have much enlargement (the total transverse diameter 15 to 16 cm.) seem to recover more rapidly and more permanently than those beyond this size. Further, when the heart size reaches 20 to 23 cm. regardless of the size of the patient these patients do not do well, as a rule. We have seen one case in the past year where the total transverse diameter was around 22 to 23 cm. and remained that size for many weeks. He is still alive and at the present time is doing light work; this of course is an unusual case.

CYANOSIS

A large percentage of cases show more or less facial cyanosis at some time during the attack, although occasionally one finds cases that show no visible signs of this condition. Especially is cyanosis likely to be well marked when pulmonary edema is present, and it is more likely to be present if there is a history of chronic coronary disease preceding the acute attack. However, there are cases where one cannot detect any cyanosis whatever during the attack. A few will have only a slight cyanosis or lividity of the skin, while others will become cyanotic a few days after the initial onset.

GALLOP RHYTHM

Gallop rhythm is present in a large number of cases, especially when hypertension is associated, although in not a few cases gallop rhythm cannot be demonstrated. However, if one finds gallop rhythm and a pulsus alternans present we believe we must assume that we are not only dealing with a patient in a severe attack, but that the acute coronary obstruction must of necessity be superimposed upon an old chronic coronary disease. Furthermore, the prognosis is not so good when either gallop rhythm or pulsus alternans is associated with a coronary attack.

PERICARDIAL FRICTION RUB

According to some authors the pericardial friction rub is a very valuable sign in this condition. In my own experience this finding is not present in more than 50% of the cases. This may be due to the fact that we are not present when the friction rub can be heard, as we all know that the friction rub appears and disappears at intervals. One day you can hear it, the next you cannot. It may be present in the morning and be gone in the afternoon. It is absent so frequently we do not believe we should let this finding interfere with our conclusions.

CONGESTIVE HEART FAILURE

When congestion in the lungs is present, shown by the presence of rales at the bases of the lungs, congestion of the liver, demonstrated by enlargement below the costal margin, it is obvious that we are dealing with not only acute coronary accident, but also an old chronic condition probably of long standing, because acute coronary thrombosis, per se, does not usually give failure in the lungs and liver during the initial attack, but usually occurs a few days later.

PULMONARY EDEMA

Pulmonary edema occurs in a comparatively few cases. When it is present it is usually severe, and it is practically always associated with a severe degree of cyanosis.

KIDNEY OUT-PUT

This is a most valuable guide during an attack of acute coronary disease. The kidney out-put diminished practically always during an acute attack. In many of these patients the urine is negative from a chemical and microscopic standpoint, but their out-put is below 20 ounces per 24 hours for a very long period of time following the accident, and the patient rarely improves to any great extent until the out-put is increased to 35 or 40 ounces a day. It is generally agreed that the kidney out-put depends upon the amount of kidney pathology present, on the blood pressure, and on the out-put of the left ventricle. These facts seem to be borne out to a very large extent in a great many cases, except for the fact that the decreased urinary out-put continues sometimes for weeks after the blood pressure has returned to a satisfactory level. This makes one wonder if there are not other factors entering into this condition than kidney pathology, blood pressure, and low left ventricular out-put. In other words, do we not depend upon the chemical and microscopic analysis of the urine too much, and not enough upon the functional capacity of the kidneys?

BLOOD PRESSURE

Blood pressure usually takes a drop following coronary accident within the first 72 hours, but may be delayed in rare cases for 10 days to two weeks. It would seem that the more severe the accident and the larger the myocardial infarct the greater the drop in pressure. Moreover, it would also seem the quicker the pressure returns to, or somewhere near, its former level, the better the prognosis. This is true in the majority of cases, but occasionally one will see a case where the pressure will continue low for a long period of time, even weeks or months before it returns to a satsifactory reading. The reaction of the blood pressure is one of the most constant findings that we have in the diagnosis of this disease, with the exception of the history of the attack and the cardiogram. The cardiogram is a valuable aid in prognosis. We have two patients in mind both of whom ran low pressures after the accident for about five months. During this time the blood pressure of both these patients ranged from 90 to 120. One of these cases had previously had a high blood pressure; in the other we did not know his former level, so had to assume it was of the hypotensive variety. It has been a year in one case and a year and a half in the other since their recovery. Neither of these patients have any heart symptoms at the present time and they are both back to work on about half time. Generally speaking, we do not have any trouble finding the drop; if there is, it may be due to the fact that when the blood pressure is taken once daily there may have been a drop and returned to normal during the interval of the physician's visit. As a rule the pressure stays down longer than a few hours, but in a few cases we have observed the pressure was only down 18 to 24 hours. If the systolic blood pressure is 200 or over before the accident, goes down to 110 to 120 and remains there after the accident for weeks, the prognosis is guarded until the pressure assumes a higher level. It rarely ever goes back to 200, but will often go up to 150 or 175 and remain there, more or less stationary, while the patient is steadily improving. Recovery is usually delayed, however, until the blood pressure has reached its normal level or nearly so.

This is especially true in the tibial, or leg blood pressure. In all probability one can place as much reliance or probably more in the tibial than brachial pressure. We realize, however, that a large group of men will not agree with this suggestion, for many of them will state that we do not know the normal leg blood pressure. This is true, but on the other hand we might also say that the normal average brachial blood pressure, which we use as our guide at present, is also far from satisfactory. The more one studies blood pressure in both extremities the more one is convinced that each patient is a law unto himself or herself. What is normal for one is not normal for another, so much so that we do not believe the present classification of brachial blood pressure is a very satisfactory one. Especially is this true when there is some cardio-vascular pathology present, for a large group of cases do much better from a cardio-vascular standpoint with a pressure considerably above the so-called normal average. Moreover, if we spent as much time taking the tibial pressures as the arm we might find, in part at least, the explanation of some of our cardio-vascular symptoms that we are not able to explain at the present time. In fact there seems to be a direct relation between the amount of dyspnea and pre-cardial pain present and the height of the tibial blood pressure. There is quite a large group of patients who have some cardio-vascular pathology present, with the brachial systolic at 110 or 140 and a normal diastolic, and a tibial systolic of 200 or more. This group will go along without very many cardiac symptoms and do a considerable amount of work daily as long as the tibial blood pressure continues at this level or above. When this recedes to or below the brachial level, the precardial pain and shortness of breath become more pronounced and continue so until their cardio-vascular balance is re-established. However, we do not believe this applies in cases with a normal cardio-vascular system. Just how to explain this we do not know, but it is a clinical fact in many cases, so it would seem that we are justified in making the prognosis from the four extremities rather than the two.

Fear and Apprehension

There is always a considerable amount of fear and apprehension in all cases of acute coronary trouble, and we somtimes believe the confidence instilled in the patient by the attending physician is just as important and, in some cases, more important than the medicine. For some of these you must go through a daily routine of getting them in an optimistic trend of mind to eliminate the fear that they are going to die and to assure them that they are going to get well. Whether the physician means this or not, this has to be said with a great deal of emphasis. If the physician hasn't the confidence in believing this himself he rarely ever imparts it to the patient. This seems to have played a large part in a number of cases we have observed in carrying them through the critical period and on to ultimate recovery.

Finance

We do not believe it is out of place here to mention something about the finances of these patients. Frequently this plays a large part in the recovery of acute coronary shock. If the patient has enough money for the ordinary hospital, nursing, and medical care, or if he has a position where his salary is continued through the accident, undoubtedly this plays a large part in their ultimate recovery. In some cases it seems to be one of the predominate factors. This is readily understood, for if the patient is financially embarrassed and has to stay in bed from three to four months with not enough money to pay his hospital bill and keep his family in the meantime, it is rather difficult for him to remain in bed satisfied.

Diagnosis

The diagnosis of acute coronary thrombosis is fairly easy in most cases, although one will encounter a case not infrequently that is very difficult and nearly impossible to analyze unless we have the aid of the cardiograph. Occasionally, with all the factors combined, there may still be some doubt as to the diagnosis. However, as a rule, it is comparatively easy and one can make it clinically without much trouble. Nevertheless, we believe this should always be followed by a cardiogram when possible, for it not only gives a fair knowledge of the location and extent of the thrombosis but helps us frequently in estimating the length of time the patient has to stay in bed, and also in making the prognosis.

If one is called to see a patient who is seized with sudden chest pain, especially in the left side, a pain severe enough to require a hypodermic of morphin, one should look upon this with suspicion as being cardiac in origin, especially if one has a fair assurance that pulmonary, gall bladder, gastric or duodenal disease is absent. Furthermore, if shortness of breath or a choking sensation is associated with the pain, you are practically sure of its cardiac origin. If the pain continues for an hour or more it is fair to assume that it is not the anginal but the coronary type. Frequently the pain has no radiation down the arms, and it must be remembered that quite a large group of these patients have absolutely no radiation during the attack or the convalescence. However, if the pain extends down either arm, especially the left, it aids one materially in analyzing the case. Obviously, if there is an associated cyanosis, gallop rhythm, pericardial friction rub or evidence of heart failure present, it is confirmatory evidence of cardiac pathology being present in a rather severe grade. One should always take the blood pressure during the attack or as soon after as possible to get his bearings for future readings. Occasionally the patient is so sick that this is not advisable but should be done at the earliest possible moment. However, one should remember that some of these blood pressures remain normal for the given case during the initial shock and do not get the pressure drop until two or three days after the onset. If one gets a drop of 40 to 50 points within the first 72 hours it is most suggestive of an acute cardiac accident.

Rales often do not appear at the lung bases for several days after the accident, and again some of these go through a cardiac-vascular break without any evidence of heart failure during either the acute illness or convalescence. We believe this depends to a large extent on the amount of cardiac pathology present at the time of the acute attack and also on the length of time the patient has suffered with cardiac symptoms before the onset. Again, if one gets a rise in temperature to 99 to 101 degrees, and a mild leukocytosis coincident with or following the drop in blood pressure the diagnosis of acute coronary thrombosis is fairly well established.

Convalescent Pain

It would seem the sooner after the initial attack the pain subsides the better the prognosis. This is not always true, however, for we have seen the pain continue off and on for weeks after the accident and the patient finally get well, but it is usually a good guide, and we believe it is fair to assume that as long as the patient has pain while in bed the healing processes are far from complete. As soon as the patient is free of pain he generally starts to improve clinically rather fast, probably due to a subsidence of the element of fear, for as long as the pain continues the patient cannot believe he is going to get well; and as soon as the pain subsides he again assumes that he is on the road to recovery. However, most of these patients have pain off and on for weeks or months after the attack begins.

It might be well here to mention premature contractions. Occasionally premature contractions occur during the convalescence of acute coronary disease. However, we do not believe it has much significance unless these prematures happen frequently, that is 30 to 40 per minute. In the latter case it may be an indication of severe cardiac pathology and we take this as an unfavorable sign until they have disappeared; it is often the forerunner of auricular fibrillation.

Treatment

1. Absolute rest in bed, from 6 weeks to 4 months.

2. Enough morphin to relieve the pain.

It must be realized here that morphin is practically the only drug that does any good in acute coronary thrombosis. It must also be realized that nitroglycerin not only does no good but is usually a waste of time. Do not be afraid to give ½ gr. of morphin or even 1 to 1½ grs. in these cases, if it is necessary. We believe more patients die from the lack of morphin in this condition than from giving them too much. As a matter of fact, there seems to be a large element of fear in the medical profession, even with very good internists, and also in men who are doing cardiology. They are afraid to give sufficient morphin in this condition. We frequently give ½ gr. to start with, and repeat if necessary within one-half an hour, depending on the severity of the case. It would seem that a patient in severe pain from this disease is able to consume more morphin without any bad effects than in any other condition, with the exception of hyperthyroidism.

When one sees a case of this type he should never think of giving less than ¼ gr. of morphin, better combined with antropine, as the initial dose. If there is no relief within 10 minutes and the patient seems to be slipping, repeat the dose immediately. If the patient is gradually growing worse do not hesitate in 15 or 20 minutes more to give him another ½ gr. and then wait to see the results. We have only seen two cases within the past several years in which morphin had no effect: one case was a Presbyterian minister who had been having attacks for several years; the other patient was a retired colonel in the Army who likewise had had attacks for a number of years. In both these cases morphin did no good whatsoever. These cases are rare. We suggest that as soon as one feels satisfied that the patient is recovering from the attack he should reduce the morphin and substitute codeine, bromides, pheno-barbital, or allonal. This will frequently carry them along during the convalescence, but of course does no good during the attack of acute pain.

Conclusion

I should like to say that acute coronary thrombosis is not nearly so serious as formerly thought. We have been observing these patients long enough to see how they progress over a period of years and my firm belief is that a very large percentage of them will not only survive the initial attack but recover entirely. Especially is this true in right coronary block, for we have seen several of this group who have recovered and are back at work in their previous positions, leading fairly active lives, and several years have passed since their original collapse. Nevertheless, we must realize that early diagnosis and proper treatment is just as important in acute thrombosis as it is in the acute surgical abdomen; often times delay is more serious in this disease. Moreover, the early recognition and long rest in bed which allows recovery to take place depends largely upon us physicians. The importance of this long rest must be emphasized to the individual patient. This can be done in a gentle way, with rare exceptions, without alarming the patient. Some of these patients get better for a time if nothing is done at all, but this is the exception rather than the rule and sooner or later they have to pay for the neglect or delay. For example we have two men in bed at the present time with this condition; one is 41 years of age, the other 44. The former went 7 weeks and the latter 10 months before the condition was recognized and treatment instituted. They have both been in bed now several weeks and it will probably be several months yet before they will have recovered completely. We are still hopeful this will be accomplished, whereas if they had had rest at the time of the original onset they would now be well on the road to recovery. Furthermore, we must say here, with only rare exception is the patient not willing to co-operate with the physician for a reasonable length of time. If we are successful in winning his co-operation and give enough morphin to relieve the pain a large percentage of these cases will not only recover but lead fairly active and happy, although restricted, lives for a number of years and probably die of some other disease.

DIAGNOSTIC POINTERS IN CARDIOLOGY

By EDWARD PODOLSKY, M. D.
Brooklyn, N. Y.

The earliest signs of decompensation in the arteriosclerotic heart are nocturnal dyspnea and night starts.

The sedimentation test is definitely shortened in patients suffering from acute coronary occlusion.

Following acute infectious diseases such as influenza there is an acute myocardial degeneration in a subject with diseased coronaries, and there is an acute myocardial breakdown producing distension and pain.

Distinct overdistension of the veins in the neck is always a sign of heart disease.

A thrill is a reliable sign of structural change in the heart only if it is a definite purr.

Pulsation of the liver is evidence of heart disease of an advanced degree, for it shows that compensation has been broken.

A diastolic murmur and a diastolic thrill at the apex are the two best signs of mitral stenosis.

A slowing of the heart manifests a delayed conduction from auricle to ventricle.

In irregular rhythms, if there is a constant quickening of the heart rate during deep inspiration, auricular fibrillation can safely be said not to be present.

Systlic retraction of the left posterior aspect of the chest at the level of the diaphragm is a sign of pericardial adhesions.

A double murmur heart with the stethoscope exerting gentle pressure over the femoral artery is a sign of aortic insufficiency.

Rhythmic jerking movements of the head synchronous with the heart beats is seen in patients with aortic regurgitation.

Rupture of the heart is moderately frequent following thrombosis.

The pain of coronary thrombosis is continuous and persistent.

Pain in the chest is a common symptom in aortitis, aneurism, aortic insufficiency and coronary obstruction. It also occurs, but less frequently, in myocarditis, endocarditis, and pericarditis.

The Cheyne-Stokes type of dyspnea is usually the earliest sign of myocardial disease.

Subacute bacterial endocarditis has an insidious onset.

The commonest irregularity associated with insufficiency of the heart is auricular fibrillation.

An unmistakable pericardial friction rub is always a reliable sign of heart disease.

In mitral stenosis the apex impulse is short and abrupt, and retraction of the chest wall in the fourth interspace can be seen during systole.

Aneurism of the aortic arch is one of the most painful forms of cardiac pain known.

The second pulmonic sound is regularly accentuated in mitral regurgitation, especially if the right ventricle has had time to hypertrophy.

There is an opening snap or click which is characteristic of cases of mitral stenosis.

There is a displacement of the left nipple upward, above a horizontal line drawn upward through the right nipple, in cases of mitral stenosis in youthful persons.

An infected vegetation in the pulmonary artery gives severe substernal pain and may be confused with the pain of coronary thrombosis.

Pain, shock, and circulatory failure are the cardinal signs of coronary occlusion.

Auricular fibrillation in Graves' disease is much more often transient or paroxysmal than that due to other causes.

The common type of bundle-branch block is the left branch block; the rare type is the right branch block.

Perforation of the interventricular septum is to be suspected when there is a progressive harsh systolic murmur and thrill over the pericardium; gradual extinction of the aortic second sound, and a marked disproportion between the force of cardiac action and the strength of the pulse.

The chief signs and symptoms in left-sided heart failure are: 1. cardiac asthma at night; 2. Cheyne-Stokes breathing; 3, acute pulmonary edema; 4, cough, which occurs mostly at night and does not readily yield to treatment. Upon physical examination one discovers rales at the bases of the lungs, dyspnea, and signs of causative factors, such as hypertension, luetic aortitis, arteriosclerosis, and chronic nephritis. There is usually no cyanosis, no venous engergement or congestion, and the liver is not enlarged.

The chief signs and symptoms in right-sided heart failure are: 1, painful and tender liver, with enlargement and engorment of that organ; 2, edema and effusion into the serous sacs; 3, cyanosis; 4, oliguria.

Organic heart pain, particularly that due to coronary occlusion, occurs much earlier and in greater proportions than ordinarily supposed.

Rapid development of uniform discoloration and gangrene of the terminal phalanges of the toes and fingers, with weak pulsations in the vessels supplying the limbs is very suggestive of an occluding auricular thrombus.

A sense of substernal oppression, a mild twinge of pain, a paroxysm of dyspnea, an aching sensation in the arm, or sudden feeling of great weakness indicates an acute obstruction of a coronary twig.

Coronary occlusion is not uncommon in patients with arteriosclerosis.

An acute enlargement of the liver suggests right coronary thrombosis.

Patients with old coronary closure frequently present a peculiar color of the face which has been described as "a leaden tint spread over an earthy hue of skin."

Characteristic elliptic retinal hemorrhages with white centers occur in acute and subacute bacterial endocarditis.

A pulse deficit indicates auricular fibrillation or extrasystoles, never partial heart block.

An irregularity in a heart beating less than 100, with no sinus arrthymia, can usually be said to be due to extra systoles or auricular fibrillation with partial heart block.

In irregular rhythm, if there is a constant quickening of the heart rate during deep inspiration, auricular fibrillation is not present.

If four or more of the heart beats are absolutely regular in time and force, that is, if irregularity is not absolute, auricular fibrillation should not be diagnosed.

A systolic movement of the thorax as a whole to the left is a valuable sign of aneurism of the lower descending thoracic aorta.

The first indication of cardiac failure is diminished tolerance of exercise.

Fatigue is an early sign of the late stages of cardiac failure.

The characteristic murmur of aortic regurgitation begins abruptly in early diastole and fades away. It is usually a long, smooth, loud, blowing and high pitched murmur.

The diastolic murmur in cases of suspected aortic regurgitation should be sought for along both borders of the sternum, especially along the left border, where it is particularly likely to appear in cases of slight regurgitation that do not affect the pulse.

A diastolic murmur is sometimes heard over the main artery of a limb in cases of conspicuous aortic incompetence.

An early diastolic murmur heard in the third and fourth left spaces in cases of mitral stenosis should be attributed, even when the pulse is unaltered, not to pulmonary, but to slight aortic failure.

Anginal pain occurs in many cases showing aortic regurgitation.

The outstanding diagnostic sign of aortic stenosis is a small pulse, rising slowly to a delayed summit. The condition should never be diagnosed without this sign.

Every case of aortic stenosis presents a systolic murmur, heard loudest where the thrill is best felt, and carried up to the clavicle or beyond into the neck along the carotid vessel.

CANCER COMMENT

Cancer of the Prostate

MARION L. H. FREEMAN*

In a series of 1.426 cases tabulated by R. S. Ferguson[2] in which the prostate was removed after a diagnosis of benign hypertrophy had been made, early or border-line cancer was found in 183 specimens, or 12.8 per cent. In view of the fact that cancer was unsuspected in this group, it appears that each case of enlargement of the prostate must be treated with suspicion until a diagnosis of malignancy can be ruled out.

The popular belief that all cancers of the prostate originate in the posterior lobe is responsible, in many instances, for the failures in diagnosing early malignancy. By the routine practice of aspiration biopsy, Dr. Ferguson[3] has been able to demonstrate that cancer can and does originate in any portion of the organ. This knowledge is of great importance in the recognition of early cancer involving the lateral or median lobes or the accessory nodules at the vesical neck.

Clinically, carcinoma of the prostate varies greatly in its manifestations, from the rapidly progressing cases occurring in middle life which are characterized by little or no residual urine and in which the first symptom is often pain and widespread bony metastases, to the slowly growing type occurring in later life in which there is a large amount of residual urine, symptoms of long standing and no pain or demonstrable metastases. The prognosis in the first group, if untreated, is exceedingly poor, 6 months being the average period of survival, while in the latter group, the patient may live for many years.

Dr. Ewing[1] emphasizes the fact that the clinical course of carcinoma of the prostate is very notably dependent upon the structural type of the tumor, the rapidly growing neoplasms being nearly all of the small cell variety, highly anaplastic, often difficult to distinguish from round cell sarcoma. These arise in organs which are often actually soft and not obviously hypertrophied. The lymphatics are usually invaded by the time the disease is recognized, and in a group of cases studied the small veins were thrombosed by tumor in 36%. The perineural lymphatics were invaded by cancer in 52% of a series of cases in which post-mortem examinations were made. Of these 52%, metastases to the bone were present in 30%, while pain was the major complaint in 60%. This, together with the fact that the incidence of pain increases with the degree of malignancy, points to infiltration of the perineural sheaths rather than pressure on surrounding lymph nodes as an early cause of pain.

It is the concensus of opinion that few if any cases are amenable to surgical removal of the prostate. Of 500 cases of carcinoma of the prostate examined by Young[4], only 35 were selected for this form of treatment. Of these only 8 survived three years or more. Considering these figures as representative, this leaves about 93% of all cases for which irradiation offers the only hope of relief or cure.

The choice of method of irradiation is entirely dependent upon the type of tumor and the degree of invasion or metastases. Cancer of the prostate may be dvided, with reference to irradiation, into two clinical groups: first, those in which the tumor is large and there are either demonstrable or probable metastases. This group is suitable for palliative treatment only, and this may often be accomplished by external irradiation with high voltage x-rays. The second group, in which the tumor is small and in which there are no demonstrable metastases, may be treated by more intensive irradiation therapy.

(Concluded on Page 266)

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"DOCTORS, DOLLARS AND DISEASE"

RADIO EDUCATION OR PROPAGANDA

In 1929 a series of meetings called by the American Association for Adult Education resulted in the formation of a body known as the National Advisory Council on Radio in Education, Inc. Its general purpose is said to be to "further the development of the art of radio broadcasting American Education." Recently, Congress enacted some legislation entitled "The Federal Communications Commission Act," which automatically abolished the Federal Radio Commission. This act also makes it mandatory on the new commission "to study the proposal that Congress by statute allocate fixed percentages of radio broadcasting facilities to particular types or kinds of non-profit radio programs" and to report to Congress by February 1, 1935.

The National Advisory Council on Radio in Education, Inc., is exceedingly interested in this problem, because it has made education of the public over the radio its particular province since the time of its organization. The Council wants more time on the air for education. In a recently issued circular, the director says "The council is an organization independent of faction, non-partisan in its procedure, disinterested as to personnel and non-commercial in operation." Notwithstanding these assertions, the medical profession is now confronted with the promotion by the National Advisory Council on Radio in Education, Inc., of a series of broadcasts under the title "Doctors, Dollars and Disease," said to be presented by the Public Health Committee of the National Advisory Council on Radio in Education, Inc. These programs are offered every Monday evening over WABC, Columbia network, extending from coast to coast, at 7:45 Pacific time, 8:45 Mountain time, 9:45 Central time, and 10:45 Eastern time.

Let us then view the nature of the organization of the Public Health Committee which prepared the program and the nature of the program itself to see to what extent the National Advisory Council on Radio in Education, Inc., has fulfilled its claims of being independent of faction and non-partisan in procedure. The Public Health Committee includes as its chairman William Trufant Foster. This is the same Foster, an economist and not a physician, who attacked organized medicine bitterly at a conference held in Philadelphia last February, fully reported in The Journal, March 3, page 701. Associated with Mr. Foster on this committee are the following physicians: Ray Lyman Wilbur, chairman of the Committee on the Costs of Medical Care and signer of its majority report; Thomas Parran, Jr., health officer of the State of New York, committed in repeated addresses to compulsory health insurance and measures leading to the socialization of medicine; Haven Emerson, formerly a president of the American Public Health Association and a signer of the majority report. Included with these four are Alice Hamilton, a distinguished investigator in industrial diseases, whose writings indicate nevertheless that her pity for the sad fate of the majority of mankind overbalances her scientific judgment in matters of social control, and, last of all, Dr. Hugh S. Cumming, surgeon general of the United States Public Health Service. It will be obvious to any one that this Public Health Committee of the National Advisory Council on Radio in Education, Inc., is overwhelmingly controlled by the State medicine and socialization of medicine points of view, and that it contains no definite representative of the 100,000 physicians organized as the American Medical Association.

The radio program developed under the auspices of this committee is, as might have been expected, overwhelmingly for the socialization of medical care. It contains the name of but one person who signed the minority report of the Committee on the Costs of Medical Care, and there are indications that he accepted under a misapprehension as to the nature of the program and will not appear. Those who are to discuss the future of medical care and the subject of medical economics are for the most part non-medical men, unfamiliar with medical practice and for the most part definitely opposed in their writings to the policies of organized medicine. Representing the opposite point of view are Walter P. Bowers, editor of the *New England Journal of Medicine*, who has made that periodical largely the organ of the majority report of the Committee on the Costs of Medical Care, Thomas Parran, George H. Bigelow, Haven Emerson and Ray Lyman Wilbur, who speak as physicians on this program. These are, all of them, proponents who would change seriously the nature of medical practice. Among the laymen listed are such well known names as Edward A. Filene, Michael M. Davis, C. Rufus Rorem, Nathan Sinai, I. S. Falk, Edgar Sydenstricker and Harry H. Moore. It calls the roll of the agitators from the Committee on the Costs of Medical Care. Other speakers include Foster, Paul H. Douglas of the University of Chicago, Robert Jolly of Houston, Texas, and Livingston Farrand, president of Cornell University, the latter as an M. D., who has for long been somewhat out of touch with medical affairs.

It should be clear to any physician that this program indicates an attempt on the part of the interests represented in the majority report of the Committee on the Costs of Medical Care to further its propaganda. In developing a program of this type the National Advisory Council on Radio in Education, Inc., has been untrue to the principles on which it was established. Thereby it fails to merit support from the medical profession. Nevertheless, physicians will do well to be aware of the matter and to use such influence as they may possess with the radio stations that carry such material to bring about a realization of its true nature.

It might have been within the province of the National Advisory Council on Radio in Education, Inc., to develop a series of useful lectures on the prevention of disease and on the maintenance of health. It might have used some of the time, which apparently it is able to get without charge from the broadcasting chains, for the enlightenment of the public on many of the scientific fallacies promoted by commercial interests. It has, however, failed to avail itself of these opportunities, devoting itself and its time instead to what constitutes essentially an undermining of the medical profession of this country. It would be interesting to know the motives that animated the executive officers of the National Advisory Council on Radio in Education, Inc., to lend themselves to this propaganda.—Editorial, *Jour. A. M. A.*, October 27, 1934.

The first meeting of the ex-Residents' Association of the St. Francis Hospital was held at the hospital on October 11, 1934. The following officers were elected: President, Dr. George J. Boines; vice-president, Dr. Sidney Stat; secretary, Dr. Minna H. Sosnov; treasurer, Dr. Morris Harwitz.

It is the purpose of this organization to hold monthly scientific meetings.

WOMAN'S AUXILIARY

With a vast amount of real appreciation of the fine work that is being done in every section of the country, I take this first opportunity to thank you for your sincerity of purpose and in consequence, real achievements. The programs of the national departments have all been distributed and that each State follow, in so far as possible, the plans set forth is an axiomatic desire of each and every one of us. There is breadth of vision in their scope, and a variety of opportunities for possible achievement in these outlines. Each and every State and county has its own possibilities for making its plans, and I am sure that each one will build its year's program that the greatest good may accrue.

To us, who are your national officers and chairmen, there is entrusted great responsibility coupled with a deep sense of the honor that is ours. We are at your service and, I can assure you that you will find ready cooperation in any problem that you wish to discuss. This exchange of ideas is one of our most pleasurable and valuable opportunities. It is only the State and county auxiliaries that can perform the proposed plans, and that performance, in turn, depends upon the individual member. And so to you and me is entrusted the bit that makes for the ultimate achievement. May you and I so live up to the trust, that at the end of the year we may have merited the confidence reposed in us.

One great bond we have in common, one ideal that we hold highest among our earthly one—the bond, that of participating in the practice of the noblest of professions: the ideal, that of using our services widely in the interest of that profession and mankind, and proving ourselves true helpmates, both individually and collectively. Collectively, we are a strong force that may be of some use in a quiet way, to the medical profession. We, who know the unselfishness of those men of ours, can do much to enlighten a frequently misinformed public about the true character of medical work and its plans for public health and welfare. We can, in a non-aggressive way, offset much of the wicked propaganda constantly kept before an ignorant and deluded populace.

With this in mind, let us use our time wisely, make our plans carefully, and thank God for the opportunity to be of service to this profession of which we are an honored part.

Mrs. Robert W. Tomlinson.

The annual meeting of the Auxiliary was held in the Hotel Richardson, Dover, on Wednesday, October 10, 1934. After an opening prayer, officers' reports were made as follows:

Secretary, Mrs. Gerald Beatty; Treasurer, Mrs. Charles E. Wagner; President, Mrs. Joseph McDaniel; Vice-President New Castle County, Mrs. Ira Burns; Vice-President Kent County, Mrs. W. C. Deakyne; Vice-President, Sussex County, Mrs. E. L. Stambaugh.

The following committee reports were then made:

Organization, Mrs. George McElfatrick; Finance, Mrs. James W. Butler; Social, Mrs. Raymond B. Moore; Program, Mrs. Edgar Q. Bullock; Medical Welfare, Mrs. Victor C. Nah; Publicity, Mrs. W. Edwin Bird. The delegate to the Cleveland convention, Mrs. Lawrence Jones, reported on that activity. The guest speaker, Mrs. W. Wayne Babcock, spoke entertainingly on the aims of an Auxiliary, and Mrs. Robert W. Tomlinson, President of the Woman's Auxiliary to the American Medical Association, spoke on "What We Are Doing," explaining the functioning of the national body.

The meeting was concluded with a joint luncheon at the hotel with the Medical Society of Delaware. The 1934 session should be recorded as one of the most successful ones yet held in Delaware.

Lilly Research Laboratories Formally Opened

More than a thousand investigators and research workers were present at the formal opening of the new Lilly Research Laboratories at Indianapolis on October 11. The gathering of distinguished visitors representing many noted bodies and famous institutions in this and foreign countries as well, assembled in a mammoth tent erected for the occasion adjacent to the Lilly Laboratories.

At the formal opening exercises, in the afternoon, Eli Lilly, head of the Lilly organization, presided as chairman. Mr. J. K. Lilly, chairman of the board of directors, was introduced and responded briefly on "Research in Manufacturing Pharmacy" from the time of his entrance in the organization in 1876 up to the present, when there is so much evidence of the fact that medical science, in becoming an integral part of our social structure, has, in turn, become in a broad measure dependent upon industrial development.

Following Mr. Lilly's remarks, Dr. Irving Langmuir, director of research for the General Electric Company, discussed "The Unpredictable Results of Research." The speaker stressed the point that fundamental research should be pursued by industrial corporations regardless of any immediate possible commercial return therefrom. He gave an account of his purely theoretical gas absorption studies which ultimately led to the development by the General Electric Company of their present highly efficient electric light bulb.

The chairman then introduced Sir Frederick Banting, who talked on "The Early History of Insulin." He gave an account of the early experiments conducted by Dr. Best and himself which first demonstrated the existence of insulin, and expressed his great appreciation of the co-operation which he and his associates had received from the staff of the Lilly Research Laboratories in the development of a practical, large-scale procedure for the production of insulin.

Sir Henry Dale, director of the National Institute for Medical Research, London, and secretary of the Royal Society, was the last speaker on the afternoon program. He chose as his topic "Chemical Ideas in Medicine and Biology." Sir Henry spoke of the immediate objectives of research in such laboratories as those of Eli Lilly and Company, and of their natural and proper differences from those of the laboratories supported by academic or public endowment. It was his thought, however, that the differences in result for the progress of medical science are often more formal than real. He expressed the hope that the growth of co-operation between those working in these different spheres might yet bring to many the rather rare privilege that had come to him of migrating from one to the other and back again, and thus of knowing at first hand the best that each can offer.

According to Sir Henry, the change that has taken place in the scope of pharmacy has a revolutionary aspect. He expressed the thought that looking at the change as a whole, one might distinguish two main contributory factors. The first of these was the recognition of infections as due to the invasion of the body by living micro-organisms. It is a commonplace, that preventive medicine was born of this discovery and that it gave a new direction to the therapeutics of infective diseases. A second factor may be found, in the recognition of diseases due to the lack of substances normally present in the body. Modern therapeutics, he said, can show no triumphs more brilliant than those which have followed the discovery of methods of preparing glandular products in sufficient purity to enable them to correct an abnormal deficiency.

The speaker paid tribute to Eli Lilly and Company for their high rank among industrial organizations which have supported scientific research for its own sake and because they have known how to value the spirit which is engendered when scientific workers are given a wide freedom.

The afternoon speaking program was followed by an inspection of the new laboratories, the party being divided into small groups in the charge of guides.

In the evening a banquet was tendered the out-of-town guests. Mr. J. K. Lilly served as toastmaster and responses were made by Sir Henry Dale; Dr. Elliott P. Joslin, of Boston; Dr. George R. Minot, of Boston; Dr. Frank R. Lillie, of Chicago; Dr. George H. Whipple, of Rochester, N. Y.; Dr. Carl Voegtlin, of Washington, D. C., and Dr. G. H. A. Clowes, head of the Lilly Research Laboratories.

Two's Company—Three's a Crowd—

"Sickness is a matter intimately personal. It is a time when sincerity of dealing cannot be compromised nor human feelings flouted.

"How disturbing, then, is the thought of having a third person or alien party exercise an influence on the relationship between the patient and his physician, the two persons who, above all others, are most vitally concerned when sickness enters the home.

"Yet this third party influence, with all its unpleasant and disturbing sequels, will inevitably be thrust upon patient and physician should some of the current new schemes of medical practice ever gain acceptance.

"Carried to their full development, such plans would mean that your family doctor would be the hireling of a commercial organization or of a department of the state, the former built up necessarily by business promotional efforts, high pressure salesmanship and price competition, the latter made compulsory by legal enactment.

"Experience has already shown that contract or insurance schemes would not be successful if they observed carefully the principles of conduct and fair competition which operate as definitely for the public good as for professional honor. In these principles financial gain is subordinated to the prime object of service to the patient and to humanity.

"Furthermore, the history of some of these ventures reveals highly deplorable tendencies. 'Scare head' advertising has appeared as a means of frightening people into subscribing for memberships. Medical service has been promised at ridiculously low and actually impossible rates. The services of hundreds of physicians have been promised to subscribing members, whereas actually but a small fraction of that number were 'signed up' and available. Patients have found that they must be served by the physician assigned to them, not by the man of their choice. And the poorer classes have paid the same price for medical service as the very wealthy.

"No, the fine, sympathetic, humanitarian service at present rendered by the family physician can never be satisfactorily replaced by a commercial organization that retails medical service for a profit, nor by the state with a mechanized or regimented medical profession. The interjection of such agencies between patient and physician is unnecessary and cannot fail to be disturbing to all parties concerned."—From Mead Johnson & Company's Announcement in *Hygeia*, September, 1934.

DELAWARE ACADEMY OF MEDICINE

Recent Accessions to the Library

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Cancer Comment

(Concluded from Page 260)

This is done by the local implantation of radium or radon, combined with the external application of high-voltage x-ray irradiation.

Dr. Ferguson's[2] retrograde seeding instrument makes the even distribution of radon seeds through the tumor a fairly simple procedure in the hands of a competent and skilled operator. This, with the ever-increasing efficiency in x-ray irradiation methods, offers new hope in the end results of treatment in this type of cancer.

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IN MEMORIAM

At the organization meeting of the ex-Residents' Association of the St. Francis Hospital the following resolutions were adopted:

WHEREAS, Divine Providence has removed from our midst our esteemed fellow practitioner, Dr. William Patrick O'Ready, be it therefore

RESOLVED, that Dr. O'Ready be declared a Charter Member of this organization, in memoriam, and be it

RESOLVED, that as an expression of our sorrow at his untimely passing we have entered on our minutes these resolutions, and be it further

RESOLVED, that we do extend to the bereaved widow our sincerest sympathies.

GEORGE J. BOINES, M. D.
President.
MINNA H. SOSNOV, M. D.
Secretary.

OBITUARY

JOHN W. DERRICKSON, M. D.

Dr. John W. Derrickson, of Frederica, one of the best-known physicians in lower Delaware, and for the past three years resident physician of Sussex County under the State Board of Health, died on October 3, 1934, at the Milford Hospital, after a short illness. Dr. Derrickson is survived by his wife, Mrs. Mary Burton Derrickson, one daughter, Mary Derrickson, one brother, Walter Derrickson, and two sisters, Mrs. Frank Martin, of Dover, and Mrs. Frank Hickman, of Frankford. Dr. Derrickson was 59 years of age, and was a graduate of the University of Pennsylvania (Medico-Chirurgical College), in the class of 1899. He was a former president of the Medical Society of Delaware. His funeral took place on October 6th with interment at Barratt's Chapel.

WILLIAM P. O'READY, M. D.

Dr. William P. O'Ready, 38, of Claymont, was found dead in his automobile in the garage at his home, by his wife, on October 9, 1934. Dr. Charles Levy said death was due to an acute heart attack.

Dr. O'Ready left his home at 4 o'clock on the morning of October 9, on a sick call. Mrs. O'Ready saw him drive up to the house about 9 o'clock and some time later received a telephone call for the doctor. Not finding him in his office she went to the garage and found her husband sitting in his automobile. With the help of neighbors Dr. O'Ready was removed to the house and attempts at resuscitation made. Deputy Coroner Hearn was notified.

Dr. O'Ready had been a practicing physician at Claymont for seven years. He was a native of South Dakota but received his medical training at Georgetown University, Washington, where he graduated in 1927. He served as interne at St. Joseph's Hospital in Baltimore in 1927, at St. Francis Hospital here in 1928. He was a member of the staff at St. Francis, the Delaware and the Wilmington General Hospital.

He married Miss Florence Draper, of Milford, a graduate of the Wilmington General Hospital School for Nurses. He is survived by his wife, his mother, Mrs. Rose O'Ready of Webster, South Dakota, and a brother Henry, of the same place. The funeral took place on October 13, with interment in the Cathedral cemetery, Wilmington.

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MEDICAL SOCIETY OF DELAWARE PROCEEDINGS: 145th ANNUAL SESSION

October 9, 1934

TUESDAY MORNING SESSION

The first General Session of the One Hundred and Forty-Fifth Annual Session of the Medical Society of Delaware convened at nine-fifty-five o'clock, in the New State House, Dover, Delaware, Dr. Joseph S. McDaniel, President of the Society, presiding.

PRESIDENT MCDANIEL: Gentlemen, even though there are but few here, we have a quorum so we might as well start. Dr. Hiley, pastor of the Baptist Church of Dover, will give the invocation.

DR. S. B. HILEY: Almighty God, we thank Thee that we can turn to Thee knowing that Thou art ready to hear us and Thou art willing to answer us. We thank Thee for all the great blessings of life and the revelation of the wondrous nature with which we are surrounded. We thank Thee for the way that Thou hast endowed man, the manner in which Thou hast touched his mind to conceive the wonderworking of Thy creation.

We pray thee, therefore, now, that Thou wouldst bless this organization, these physicians, in such a way that in all their work they may realize that they are co-operating with Thee for the benefit of mankind; and that as they co-operate with the great laws that Thou hast set in motion that they may indeed bring to mankind the marvel of Thy blessing, that they shalt know they have served not only their fellow man but have served Thee.

We pray Thee that Thou wouldst bless them, touch their minds and their hearts in such a way that they shall find not only the returns that may enable them to feel that they are successful, but the returns that will give them that joy to know that they have conferred a blessing upon humanity. Therefore, lead them through these sessions, we pray Thee, that they may go from here with a greater conception of their profession and the service to their fellow man, and that they may find increasing joy and delight and satisfaction that in the end shall crown them with immortality. So lead them and bless them in all the work they do, for we ask it in the name of the Power without sign and failure, in the name of Jesus Christ, our Redeemer. Amen!

PRESIDENT MCDANIEL: Gentlemen, we think we are fortunate in having an address of welcome given by the Mayor of the Town of Dover, Mayor Woodford, who has the reputation of being a good talker. I am sure he has a good message for us. We will now hear from the Hon. Wallace Woodford, Mayor of the Town of Dover.

...The audience arose and applauded...

HON. WALLACE WOODFORD: Mr. Chairman, Ladies and Gentlemen: I assure you that it is a privilege to have this opportunity of welcoming such an important group to the capital of our first State. I think that I have had that oportunity before. It seems very fitting that you should be meeting in this legislative hall. I have had the opportunity of speaking in here on several occasions, but never to such a sedate group as this. It just occurred to me that sitting here it would be interesting for you to draw upon your powers, your technical powers, and attempt to diagnose the causes of the deplorable condition of our legislative bodies in years past. That is just a suggestion.

Of course, being a mayor, it has its ups and downs, its lights and its shadows, but one of the bright spots, as Mayor Speer can testify, in a mayor's career is to have the opportunity of welcoming various groups to the community. So I am mighty glad on behalf of the City of Dover to welcome you to Dover.

Of course, it is customary in speeches of this kind to extol the beauties and advantages of your city; but I don't think that is necessary upon this occasion. Sir Christopher Wren, who was a noted architect in years gone by, when he died was buried in St. Paul's Cathedral, in London, which he created. Instead of building a monument to his memory, there was simply placed over his resting place the following epitaph: "Here lies the body of Sir Christopher Wren. If you would see his monument, look around you." So that is the way we feel about Dover; if you would see its beauties and advantages, just look around you. But Dover, linked so intimately with historical associations of the past, at the same time animated with the progressive spirit of the future, bids you hearty welcome!

Do you know, sometimes I don't think we appreciate what a wonderful privilege it is to live in this state of Delaware. We are a homogeneous people. We are so compact together that we are simply one big neighborhood. Too, we are a conservative people, but it is that brand of conservatism that looks upon new things and new ideas with open and receptive minds. We are proud of our ancestry. The Swedes and the Dutch and the English have contributed those elements to our character that make for stability and solidarity, which after all are the essential traits of character we need in the nation today.

So as we travel through the country in the crowded metropolitan centers, where there is so much strife and turmoil, and when we look upon those sections of the country where radicalism is so rampant, we can congratulate ourselves that we live in Delaware, where the only disturbing sounds in the air are the braggard voices of the political officers, and where life really flows along like a song.

I am glad to welcome this group because it is emblematic, that is the medical profession is emblematic, of that old and trite but significant term, "Service." Oh, I know that you don't forget to send your bills regularly to your patients, but nevertheless we look upon the medical profession, the outside world, as emblematic of service in the highest sense of the word.

The medical profession, as I see it, is replete with heroism and sacrifice, and those are two qualities that we need in this troubled world of ours today. We don't have to look upon the battlefield for heroism or self-sacrifice. We find it in the commonplace walks of life, and we find it in this profession. As I said just a moment ago, those are two qualities which we need today as we attempt to solve the bewildering problems which are confronting us.

The reason I say that is because I think we all realize that we are embarked upon a thrilling adventure, an adventure that calls for just these two qualities of heroism and sacrifice. It is an adventure that does not simply call for one man or one group; it demands the co-operation and the thought and the effort of all men and of all groups. We are embarked upon this adventure to restore order and harmony to our social, political and economic life; we are engaged, too, in an effort to change the figure, to restore the tapestry of our national life to those bright and appealing colors of social and economic justice, which, after all, were enthroned or enshrined in the hearts of our Revolutionary fathers back in the long ago. So I am sure that the medical profession, while your program is full of matters and subjects affecting your profession, are thinking of these things, which are upon the mind of every citizen today.

This thrilling adventure upon which we have embarked is something that we can't put off until tomorrow. We can't be content to bask in the reflected glory of the past. It is today that we are thinking of; it is today that we must build for the future. So we are all called upon to take our part in this great adventure, and to display heroism, because it takes heroism of the highest order to solve the problems and to adjust ourselves to constantly changing conditions.

It was heroism of the highest type that pushed this nation of ours up to the zenith of power and wealth, and now it is our opportunity to give to this nation a soul. So I say that we should not think of the past so much, but we should look to today. It is true that we should look toward the future; however, our most important job is to build today, to think and act today in the right way so that the future will take care of itself.

Look well to this day for it is life, the very life of life.
In its brief course lies all of the varieties and realities of our existence:
Bliss of growth, glory of action, splendor of beauty.
For yesterday is but already a dream, tomorrow a mere promise,
But today well lived makes yesterday a dream of happiness and tomorrow a vision of hope.
"Look well, therefore, to this day," such is the salutation of the God.

Therefore, gentlemen, on behalf of the citizens of Dover I bid you a sincere welcome, and trust that your deliberations and your stay in Dover will be pleasant and profitable.

PRESIDENT MCDANIEL: Thank you, Mayor Woodford.

SECRETARY SPEER: Ladies and gentlemen, the presidential address is the next order of business. Dr. Joseph S. McDaniel, our President, will at this time address us.

President McDaniel read his prepared paper, entitled: The History and Progress of Medicine. (Printed in THE JOURNAL, October, 1934).

SECRETARY SPEER: To the President and Members of the Medical Society of Delaware:

The Annual Meeting of the House of Delegates of this Society met in the New State House at Dover, Delaware, on October 8, 1934, at 8 p. m., with President Joseph S. McDaniel in the chair. The reading of the minutes of our last meeting was dispensed with as they were published in the State Journal. The President then appointed the following nominating committee: Dr. T. H. Davies, Dr. I. J. McCollum, Dr. R. C. Beebe.

The reports of the officers were read, and on motion all were approved. The reports of all the standing and special committees were read, and on motion approved. There was a report from every one of the committees, with none missing. The report from the Delegate to the A. M. A. was very comprehensive and complete. All of these reports will be published in THE JOURNAL in full.

Under unfinished business a resolution was acted upon. This resolution was introduced at the last annual meeting, was voted on then, and passed. The resolution is as follows:

"To change the By-Laws under Article VII, Section 7: The Council, upon recommendation of the Board of Directors of a component society, shall have power to remit the dues, assessments and other financial obligations to the Society of any member who, on account of sickness, age, or other legitimate cause, is unable to pay the same. The name of the beneficiary shall be known only to members of the Council."

Under new business the matter of a salary to be paid to the editor of our Journal was discussed, and it was unanimously passed that a salary should be paid, the amount to be determined by the Councilors.

Another resolution was passed, which concerns this book (holding it up). This book is 112 years old. It was started in 1822, and it was in constant use by the different treasurers of the Society until 1931. It is now filled, and because of its age, and because of the records that are contained therein, it was decided that it would be a very fitting thing to keep that as a memento. There was some discussion as to just where it should be kept, and it was finally decided that the Library of the Academy of Medicine was the proper place for it, and on motion, which was duly seconded, it was unanimously carried that this book, which is a record of a great many of the Society's activities, especially the financial side of them, dating back to 1822, will now be presented to the Library of the Academy of Medicine to be kept by them.

Another resolution concerning the exploitation of drugs and various methods of treatment over the radio was presented and passed. The resolution puts our Society on record as being opposed to this form of advertising, as it is contradictory to the public good.

The approval of the present scientific program was moved, seconded and passed unanimously. Wilmington was selected as the meeting place for next year.

The Nominating Committee reported the following as the nominations for 1935 (See the Transactions of the House of Delegates, in this issue):

There being no further business to come before the House, it was regularly moved, seconded and carried that they adjourn until our next regular meeting unless sooner called to order as per the By-Laws.

DR. I. J. MACCOLLUM: Mr. President, I move you the report of the House of Delegates be accepted.

DR. JOSEPH P. WALES: I second the motion.

...The motion was put to a vote and was carried..

PRESIDENT MCDANIEL: The next thing on the program is the Scientific Papers. The first one is "A Preliminary Report on Tuberculosis Prevention in Delaware," by Dr. Joseph P. Wales, of Wilmington. Dr. Wales!

Dr. Wales then presented his paper, which was discussed by Drs. L. B. Phillips and N. W. Voss.

PRESIDENT MCDANIEL: Is there any further discussion either on Dr. Wales' presentation or the discussion of it by Dr. Phillips?

The next scientific paper on our program will be by Dr. Robert W. Tomlinson, who has recently received a degree of Master of the Science of Medicine for post-graduate work done in Philadelphia, and who will talk on "Gastro-intestinal Disease: Some Recognized Essential Diagnostic Procedures." Dr. Tomlinson!

DR. ROBERT W. TOMLINSON: President McDaniel, to you I bring a very pleasant good-morning, sir, and extend to you my appreciation of this opportunity to address so distinguished an assemblage gathered in august conclave: a group of men who, because of that which they accomplished as a functioning unit in medicine in Delaware and in the nation, were revered by my late father, and engendered in his heart much of the compensation which comes from confrereship from esteemed associates.

To the officers of this body I extend salutations; to the confreres and esteemed guests I exhibit greetings.

Prefatorily I would like to say that the effort to compile something which might be of some worthwhileness to you from the aggregate of the literature pertinent thereto entailed some effort. The original draft of this brief totaled some eighty pages. We have boiled it down to 13 pages, and I think I perchance can get through inside of the prescribed time.

...Dr. Robert W. Tomlinson then presented his prepared paper...

PRESIDENT MCDANIEL: You have heard the very excellent paper of Dr. Tomlinson. Is there any discussion? If not, we will move along.

The next feature on the program is a motion picture showing "The Plastic Surgical Reconstruction of the Deformed Nose," by Dr. Keith Kahu, of New York.

Dr. Kahn then showed his picture, which was discussed by Dr. G. W. K. Forrest.

PRESIDENT MCDANIEL: While we are getting the slides fixed up for the next presentation, we will recess for five minutes in order to give you a chance to smoke.

...Recess of five minutes...

PRESIDENT MCDANIEL: The next paper on the scientific program will be by Dr. Lay Martin, of Baltimore, and will deal with "Recent Investigations on the Physiology of Gastric Secretion and Its Relation to Clinical Medicine." Dr. Martin is an Associate Professor of Medicine at Johns Hopkins University. Dr. Martin!

Dr. Martin then addressed the Society, followed by a discussion by Dr. R. W. Tomlinson.

PRESIDENT MCDANIEL: On behalf of the Medical Society of Delaware, I wish to thank all those who have given of their time to deliver and prepare these papers. They have all been instructive, and we wish to thank you for them very heartily.

Now we will adjourn to the Mapledale Country Club where a luncheon will be served as soon as we get there. I wish everybody would go right out there so we can get through and start the afternoon program on time.

...The meeting adjourned at one o'clock...

October 9, 1934

TUESDAY AFTERNOON SESSION

The meeting convened at two o'clock, Dr. Joseph S. McDaniel, President of the Society, presiding.

PRESIDENT MCDANIEL: Gentlemen, in order to start this afternoon's session we are fortunate in having with us an outstanding man in medicine, a former President of the Pennsylvania State Medical Society, and at the present time Professor of Applied and Clinical Medicine and Therapeutics in the Women's College Hospital, Philadelphia. I take pleasure in introducing to you Dr. Henry Jump, who will speak to you on "Treatment of Pneumonia by Means of Serum, Oxygen Tent and Pneumothorax."

Dr. Jump presented his paper, which was discussed by Dr. R. W. Tomlinson.

PRESIDENT MCDANIEL: The next paper on the program this afternoon is certain to be interesting to all of us. I am sure it is a pleasure to me and to all of the members of the Medical Society of Delaware to welcome one of the outstanding gynecologists and obstetricians in the country. He occupies the chair of Obstetrics at Jefferson Medical School, and has written many books and papers on the subject of gynecology. It gives me great pleasure in introducing Dr. P. Brooke Bland, whose subject is "Intracranial Injuries of the Newborn from the Standpoint of the General Practitioner." Dr. Bland!

...Dr. Bland presented his prepared paper, and showed a motion picture...

DR. G. W. K. FORREST: Mr. President, before you enter into the discussion of this paper, may I make a motion that we extend a rising vote of thanks to Dr. Bland for his elegant paper, and to the other guest speakers of the day, Dr. Jump and Dr. Martin?

DR. O. H. JAMES: I second that motion.

...The motion was carried by the members arising and applauding...

PRESIDENT MCDANIEL: Is there any discussion on this paper?

The next paper scheduled on the program is entitled "Medico-Legal Problems," and was to have been given by Hon. Daniel J. Layton, Chief Justice of Delaware, this afternoon. This has been postponed, and will be given tonight at the public meeting in this room at eight o'clock. At first the Committee decided not to have an evening meeting, but after mature reflection we finally decided that we owed it to the public to have one. I want to impress upon you the importance of this meeting, and urge everybody to attend in order that the public may know your interest in this session.

I would like to declare a five-minute recess for smoking, and then we will go on with the other papers.

...Recess...

PRESIDENT MCDANIEL: The next paper on this program is by Dr. Charles E. Wagner, of Wilmington, on "Pyelitis in Children." Dr. Wagner!

Dr. Wagner presented his prepared paper, which was discussed by Dr. B. S. Dallett.

PRESIDENT MCDANIEL: Just before we hear the last paper on the program, I want to announce that this program has been changed around on account of the address of the Chief Justice being given this evening. We will have open house at six, therefore, instead of at eight-thirty as announced in the program. Dinner will be served to everybody, and after dinner you can do as you please: stay at my home, come to the meeting, or anything you want.

The next paper will be on "Infant Feeding, with Special Reference to Lemon Feeding," by Dr. John B. Baker, of Milford.

DR. BAKER: I would like to just make a little note with reference to that title there. There has been a little misunderstanding as to the last portion of the title. The correct title is: "Infant Nutrition With Reference to Lemon Juice Feeding."

...Dr. Baker then presented his paper, which was discussed by Drs. Pierson and C. E. Wagner.

PRESIDENT MCDANIEL: I wish to thank Dr. Wagner and Dr. Baker for the papers they have presented, which have been very interesting and instructive.

We will now adjourn for the afternoon, and don't forget the public meeting at eight, and come one and all to my house at six.

...The meeting adjourned at five twenty-five o'clock...

October 9, 1934

TUESDAY EVENING SESSION

The Public Meeting given by the Medical Society of Delaware convened at eight twenty-five o'clock, Dr. Joseph S. McDaniel, President of the Society, presiding.

President McDaniel: Ladies and Gentlemen: This meeting is sponsored by the Medical Society of Delaware, which at the present time is holding its one hundred forty-fifth annual meeting. We are the third oldest medical society in the United States.

We have a book here (exhibiting) that we thought might be interesting for you people to know about. It was started in 1822. It is the treasurer s book of the Medical Society of Delaware. This book was kept in constant use until 1932. It has been given to the Academy of Medicine in Wilmington to be kept for future reference.

There are approximately 245 doctors in the state of Delaware, about 179 belonging to this Society. There are three county medical societies in Delaware, one representing each county. Membership in the county society automatically entitles one to membership in this State Society, which also automatically makes one a member of the American Medical Association.

Delaware should be proud of its physicians and surgeons. They rank with the best in other states. Their efforts are always for the public good both in health and community matters.

They have invited you here this evening to acquaint you with first hand information on such subjects as they feel you should know about.

On behalf of the Medical Society of Delaware I want to welcome you heartily and sincerely.

The first speaker is known to all Delawareans. His father was a doctor. He is a friend of the profession, and as Attorney General assisted this Society in preventing illegal practicing by quacks. At present he is also President of the Medical Council of Delaware.

I take great pleasure in presenting the Hon. Daniel J. Layton, Chief Justice of the State of Delaware.

The audience arose and applauded and Judge Layton presented his prepared paper on "Medico-Legal Problems."

President McDaniel: I think we are honored in having had this very interesting and instructive paper from the Chief Justice of our state tonight. He has asked to be excused so he can get back home, so I want to thank him on behalf of the Medical Society of Delaware for coming up here and giving us such a wonderful treat.

Judge Layton: I would like to stay and hear the next two papers.

President McDaniel: We are glad you are able to stay.

Our next speaker is one known to the medical profession, and is more qualified to talk on the subject of narcotics than most any one. His wide experience as head of the Philadelphia General Hospital, where he observed and treated these cases, makes him an outstanding person in this line.

I take great pleasure in introducing Dr. Joseph C. Doane, Superintendent of the Jewish Hospital, Philadelphia, and Clinical Professor of Medicine at Temple University, who was also the former Superintendent of the Philadelphia General Hospital. Dr. Doane!

Dr. Doane then delivered a most enlightening address on "Opium."

President McDaniel: Ladies and Gentlemen, I think you will all agree with me that we have listened to two very wonderful papers, both of them on different subjects of course, but both very interesting. From both there is something that you will do well to take home and think about.

The last speaker is known to everyone in this state. He is a past-president of this Society, and the present Secretary. He also is the Mayor of Wilmington, and the day before yesterday, when I called him up and asked him to pinchhit and give us a talk here this evening, I was afraid from what I heard up there that I was not going to be able to get him down here because he had closed up one of the moving picture shows in Wilmington, as it was showing on a Sunday evening, and when he came to find out it was for the benefit of the Homeopathic Hospital. However, after he agreed to attend church for several consecutive Sundays they let him come on to Dover. We will now hear from Dr. William H. Speer, the Mayor of Wilmington.

Dr. Speer then addressed the meeting on "Some Instances of Quackery."

President McDaniel: I think you will all agree that you have listened to a well-balanced program, and I hope you will go home tonight enlightened on some of the subjects in medicine.

Thank you for your attendance. We will now adjourn.

...The session adjourned at eleven o'clock...

October 10, 1934

WEDNESDAY MORNING SESSION

The meeting convened at ten twenty o'clock, President McDaniel presiding.

President McDaniel: I am sorry to start the last session of the meeting of the Medical Society of Delaware with such a small turnout, but we must get the program going, and I do not think it will be long before others will drift in.

The paper that is first scheduled is entitled "The Results of High Voltage X-ray Treatement in Metastatic Carcinoma of Bones," and will be given by Dr. George C. McElfatrick, of Wilmington.

Dr. McElfatrick presented his prepared paper, which was discussed by Drs. C. P. White, Ira Burns, R. W. Tomlinson, B. M. Allen, D. M. Gay, E. R. Mayerberg and Mrs. Marion Freeman.

President McDaniel: If there are no further questions, we will go on to the next paper by Dr. Douglas M. Gay, entitled "The Pathology of Bladder Tumors."

Dr. Gay presented his prepared paper, illustrated by slides, which was discussed by Drs. G. C. McElfatrick, R. W. Tomlinson and B. S. Vallett.

President McDaniel: Is there any further discussion on Dr. Gay's paper? If not, we will pass on to the next.

The next paper on the program is entitled "Nasal Accessory Sinuses from the Standpoint of the General Practitioner," to be given by Dr. Emil R. Mayerberg, of Wilmington.

Dr. Emil R. Mayerberg presented his prepared paper, which was discussed by Dr. E. R. Miller.

President McDaniel: We are fortunate in having with us as the essayist of the next paper, Dr. William Bates, Associate Professor of Surgery at the Post-Graduate School of Medicine, University of Pennsylvania, who will speak on "Faulty Body Mechanics a Factor Causing Diagnostic Errors." Dr. Bates!

Dr. William Bates: In the first place I want to express my appreciation for the invitation to be here. It is a subject that has been of a great deal of interest to me recently, during the past few years, and it has been a very important piece of work by my chief, Doctor Carnett, who has recently died. This is one of the first opportunities that I have had of carrying on what he felt was a message to the other medical men.

Dr. Bates then presented his prepared paper, which was discussed by Drs. O. S. Allen, T. H. Davies and Hugo Heitefuss.

President McDaniel: The next order of business is the election of the President for the following year.

Dr. G. W. K. Forrest: It is my very happy privilege this morning to recall to the minds of the members present the name of a man who has been neglected in the State Society.

I have been very active in the activities of the State Society for all this century. I became a member of the State Society shortly after my graduation in medicine, about '98, or '99, or thereabouts. In the early part of about 1904 or 1905 I became secretary of the State Society. I continued that office for twelve years, and then for some reason or other I was extended the extreme courtesy of being elected President of this Society.

During practically all that time Dr. Charles Peter White has been active not only in the State Society, but extremely active in the New Castle County Medical Society. I am sure I can say without contradiction that before Dr. White's inception as secretary of the New Castle County Medical Society we were not functioning so well. Our programs were not so very interesting, and it was rather difficult to obtain a quorum almost, but Dr. White did start a systematic plan of programs, which were continued during his secretaryship and continued afterwards, when he was elected President of the New Castle County Medical Society. That, I think, was the beginning of what has now become a very active, progressive New Castle County Medical Society. Gentlemen, I hope we can almost make it unanimous in selecting Dr. White as our next President.

...The nomination was seconded by several...

Dr. E. R. Mayerberg: I present the name and nominate Dr. Jerome D. Niles, of Townsend. The reason I do that is because (it is pretty difficult for me to have to do it) of my promise to do it. I am nominating a man in opposition to one that I have admired and respected for the past eighteen years since I first came in contact with him. I really dislike feeling that I should nominate somebody opposed to him, and I am not doing it in opposition to Dr. White. I present the name of Dr. Niles because I feel the real need this year of a man from New Castle county instead of from the city of Wilmington. In the first place, we have before us a legislative year, and if there is one thing that the average legislator hates it is anybody from the city of Wilmington; for some reason they would rather talk to somebody from the county. They talk the same language. I know from experience in the last two or three sessions of the Legislature that the men who have gotten the furthest before the Legislature have been men from outside the city of Wilmington.

New Castle county itself has not had a President for the past ten years. Dr. Dorsey Lewis, of Middletown, was the last man from outside of the city of Wilmington.

Dr. Niles is a past president of the New Castle County Society. He gave us one of the best years we have ever had in the history of that organization, as far as progress went. Dr. Niles has been on the Legislative Committee, and has headed that Committee of the State Society for the past two years, and he has done admirable work.

I feel, inasmuch as New Castle county has not been represented for a period of ten years, and inasmuch as we are facing a legislative year, that we need a young and active and progressive man who can answer the call at any time that he is needed. Mr. President, I hand you the name of Dr. Jerome D. Niles, of Townsend.

Dr. Robert W. Tomlinson: I would like to second that nomination, not per se that I have any opposition to Dr. Charles P. White, because I don't think that any man of the medical profession of the state of Delaware has anything in his heart but the highest admiration for a man of such sterling character, who stands out preeminently before us. However, I do feel that the promise which was made to Jerry Niles at the last convocation of this Society in Lewes, when he withdrew when an attempt was made to nominate him for the encumbency of President of this organization in favor of His Honor, the Mayor, Dr. Speer, should be kept. We made a promise to him at that time that when this thing was brought up again we would be loyal to him and manifest our allegiance. I think this Society has got to stick by its word.

Dr. Chipman: I move that the nominations be closed.

Dr. MacCullum: I second that motion.

...The motion was put to a vote and carried...;

Dr. Tarumianz: I move we have a secret ballot on it.

...The motion was seconded by several, and carried...

President McDaniel: I would like to appoint Dr. Harold Springer and Dr. I. W. Mayerberg, as tellers.

...The ballots were passed out and voting took place...

President McDaniel: Gentlemen, according to the count of the tellers there are 31 votes for Jerome D. Niles and 25 for Charles P. White. I, therefore, declare Dr. Niles the President of the Medical Society of Delaware for the year 1935.

Dr. Charles P. White: I move that we make that unanimous.

Dr. Forrest: I second that motion.

...The motion was put to a vote and was carried...

President McDaniel: Dr. Niles, will you please come up here?

...The audience arose and applauded...

President-elect Niles: This is one time in my life perhaps when I am at a loss to say much of any consequence. I want to say my opponent is one of the finest men in this state, and has been one of my best friends for most of my life. I have known him ever since I was a very young man.

As President of this Society I am going to endeavor to correct some of the things I have heard discussed, particularly at this year's meeting. One of these is the attendance we have had here. It has been somewhat criticized because there has not been a greater attendance. I don't know why it is. The programs have been most marvelous, and the President's and Secretary's efforts this year could not be surpassed. You had everything here that would draw your attention and cause you to come here and take an interest in this Society.

You must remember that the Medical Society of Delaware is a monument that represents the medical profession of Delaware. Our legislation and our standards of medicine are the keystones of this monument, and this keystone can only be kept from decay by the enthusiastic co-operation of every member of this Society.

A keen watchfulness of our legislation is necessary for the continuance of our organization, and therefore I will promise you that I will give every bit that there is in me to the duties I am supposed to perform, and I ask you, in the same breath, to co-operate with me in every detail.

If there ever was an important time in the history of medicine, it is right now. All over this universe there has been a great deal of worry as to the future of medicine, and this can only be combatted, and our structure can only be sustained by co-operation from every decent, legitimate medical man of this state and this country.

I thank you!

Dr. MacCollum: May I make a motion? The House of Delegates selected Wilmington as the next meeting place. I would like to make a motion that the meeting place for the next State Medical Society meeting be changed to Middletown.

President-elect Niles: That was settled

Secretary Speer: The report of the House of Delegates was approved by the entire body yesterday morning.

Dr. MacCollum: Can it be changed here now?

President-elect Niles: It was discussed before the House of Delegates, and the report was approved the next morning that we should meet at Wilmington.

Secretary Speer: At the meeting of the House of Delegates it was suggested that we go to Middletown, but that motion fell when the prior motion that we go to Wilmington was carried. That report was approved yesterday morning in open meeting.

Dr. MacCollum: Then my motion is not in order at this time?

President-elect Niles: No.

If there is no further business to come before the meeting I declare the One Hundred and Forty-Fifth Annual Session of the Medical Society of Delaware adjourned.

The session adjourned at one five o'clock.

MEDICAL SOCIETY OF DELAWARE TRANSACTIONS: HOUSE OF DELEGATES

October 8, 1934

The meeting of the House of Delegates of the Medical Society of Delaware convened at eight-forty o'clock, in the New State House, Dover, Delaware. Dr. Joseph S. McDaniel, President of the Society, presiding.

President McDaniel: The meeting will be called to order.

The first order of business will be the roll call by the secretary.

...Secretary Speer called the roll...

Secretary Speer: Mr. President, there are vacancies of six delegates in New Castle County, one in Kent, and two in Sussex.

President McDaniel: There are some of the alternates present.

Dr. T. H. Davies (Wilmington): My name was not read.

Dr. J. P. Wales (Wilmington): Dr. Davies is a delegate.

Secretary Speer: Appointed by whom?

Dr. J. P. Wales: Appointed by the President of the New Castle Medical Society at the last meeting.

Secretary Speer: He did not notify me that such was the case.

Dr. J. P. Wales (Wilmington): He was appointed at the last meeting to replace Dr. Tomlinson.

Dr. I. W. Mayerberg (Dover): I am supposed to be a delegate from Kent County.

Secretary Speer: I have not, as secretary of the State Society, been so notified.

Dr. J. P. Wales: I think that as long as both of these men have been told by the presidents of their county societies that they are to be delegates, they should be accepted as such.

Secretary Speer: It is not sufficient that they be notified, but the secretary of the State Society should also be notified. However, I am perfectly willing to go along and accept them if the other members of the House of Delegates will permit it.

Dr. Harold Springer (Wilmington): I move that Dr. Davies be accepted as a delegate from New Castle County in place of Dr. Peter W. Tomlinson.

Dr. J. P. Wales: I second that motion.

...The motion was put to a vote, and was carried..

President McDaniel: Dr. T. H. Davies is a delegate from New Castle County.

Dr. I. J. MacCollum (Wyoming): I move that Dr. I. W. Mayerberg be accepted by the House of Delegates as a delegate from Kent County.

Secretary Speer: In whose place?

Dr. MacCollum: He was elected because we were of the opinion that there were enough members in our County Society to entitle us to another delegate. We were informed that Kent County Medical Society was entitled to another delegate other than the ones we have already.

Dr. W. E. Bird (Wilmington): The directory page of the Journal has been carrying the delegates from Kent County for some months back as Drs. James, MacCollum and Mayerberg, so that would seem to eliminate the necessity of a vote on Dr. Mayerberg.

Secretary Speer: I have a February number of the Journal in which the delegates from Kent are listed as Drs. C. J. Prickett and I. J. MacCollum. I have never been notified as secretary of the State Society of any change in that.

Dr. Bird: In the issues later than that, April or May, I believe this change was noted. You don't happen to have the September Journal with you, do you?

Secretary Speer: No.

Dr. Bird: On the back of the page where we have the habit of printing the President's physiognomy, there is the list as sent to The Journal. You should have official word of any change, of course. Therefore, in view of your not having been notified by the President of the County Society I withdraw my remarks as to the necessity for a motion.

Dr. MacCollum: I agree that the secretary of the State Society should be notified, or in lieu of that that it should be decided by the House of Delegates themselves whether or not to accept a delegate from a County Society. Therefore, I renew my motion that Dr. I. W. Mayerberg be seated as a delegate from Kent County.

Dr. Harold Springer: In whose place?

Dr. C. J. Prickett (Smyrna): I have been a delegate for the past three years. My term ran out last year. I was delegate last year for the last time. Dr. I. W. Mayerberg was elected at the regular meeting of the Kent County Society, in about December, I think it was, in my place. Dr. Mayerberg is the delegate instead of myself. I second Dr. MacCollum's motion.

President McDaniel: Inasmuch as there is some contention about Dr. Mayerberg officially being a delegate, I will accept Dr. MacCollum's motion, and we will vote on it.

...The motion was put and carried...

President McDaniel: Dr. Mayerberg is seated as a delegate from Kent County, in Dr. Prickett's place.

Dr. I. W. Mayerberg: I understood at our last meeting, since we had a sufficient number of men in our Medical Society to call for another delegate, that Dr. Prickett was re-elected to be the fourth delegate from Kent County.

President McDaniel: You don't have a sufficient number to warrant four delegates.

Dr. I. W. Mayerberg: I understood that was so.

Secretary Speer: Kent county still has one absentee. Drs. I. W. Mayerberg and MacCollum are present and accepted as delegates.

Dr. Bird: I nominate Dr. Prickett to be seated as a delegate from Kent County in the place and stead of Dr. O. V. James.

Dr. T. H. Davies: I second that motion.

...The motion was put to a vote and was carried..

President McDaniel: Dr. Prickett is seated as a delegate from Kent County in place of Dr. O. V. James.

Secretary Speer: We have all the delegates from Sussex, but no alternates. Does Dr. Wood know who the alternates are? Is there nobody here from Sussex but you?

Dr. G. V. Wood (Millsboro): Nobody else.

Dr. J. W. Bastian (Wilmington): Ten delegates constitute a quorum for new business. Time is running along. We have some alternates here from Wilmington. It makes no difference what part of the state they are from. As long as we have ten delegates we can go ahead and do business.

Secretary Speer: There are five vacancies in the New Castle County delegation and five New Castle alternates here.

President McDaniel: Then that is all right, as long as five alternates are present, and we have only five vacancies to fill.

Secretary Speer: Dr. B. M. Allen, Dr. J. W. Butler, Dr. I. L. Chipman, Dr. Dorsey Lewis and Dr. E. R. Mayerberg: they are the only five here so they have to make up the deficit.

Dr. MacCollum: I will nominate Dr. Wood to fill Dr. Beebe's place from Sussex County.

Secretary Speer: Dr. Wood is already a delegate.

Dr. J. W. Bastian: Do I understand we have not ten members? There are six already here from New Castle County that are delegates. Then we have at least three alternates and we have three from Kent County.

Dr. Bird: As I understand you, is it a fact that these alternates are all seated now?

Secretary Speer: Yes; the House now consists of: President, Joseph S. McDaniel; First Vice-President, Paul R. Smith; Second Vice-President, E. L. Stambaugh; Secretary, W. H. Speer; Treasurer, A. L. Heck; Councilor, Lewis Booker; Delegates from New Castle County, B. M. Allen, J. W. Bastian, J. W. Butler, W. E. Bird, I. L. Chipman, A. L. Heck, D. W. Lewis, E. R. Mayerberg, L. S. Parsons, M. I. Samuels, H. L. Springer, Joseph P. Wales, T. H. Davies; Delegates from Kent, I. J. MacCollum, I. W. Mayerberg, C. J. Prickett; Delegates from Sussex, G. V. Wood, R. C. Beebe.

Dr. Bird: Then we are organized, and we have more than a quorum, so I move we proceed with the order of business.

Dr. Springer: I second that motion.

...The motion was put to a vote and carried...

President McDaniel: As long as a quorum is present, we will declare the House of Delegates open.

Next order of business is the reading of the minutes of the last meeting.

Dr. Bird: I move the reading of the minutes be dispensed with as they have already been printed in The Journal.

Dr. Springer: I second that motion.

...The motion was put to a vote and was carried..

President McDaniel: The next order of business is the appointment of a Nominating Committee, as follows: Dr. T. H. Davies, from New Castle; Dr. I. J. MacCollum, from Kent, and Dr. G. V. Wood, from Sussex.

Will these gentlemen please retire and consider the nominations?

We will now have the report of the President, according to the printed program.

Report of the President

As far as a report is concerned, I have nothing more to say than the message included in my letter to The Journal this month.

I have been able to visit the New Castle Society several times, and congratulate them on the very interesting and instructive meetings. The attendance was fine, the programs excellent.

I was only able to visit the Sussex County Society once, but found a large attendance and interesting program. This meeting was to celebrate the fiftieth anniversary of Dr. Orr's practice, a wonderful record for one of our fraternity.

Our mid-year meeting was well attended at the Hotel Richardson, Dover, in February, and we were fortunate in having with us then Dr. Henry D. Jump, of Philadelphia, who spoke on "Intravenous Medication," and Dr. Harold Jones, of Philadelphia, who spoke on "Anemias." We had a good attendance. I think the next president should keep these mid-year meetings in mind.

As I said before, there was nothing in the medical line to be attended to during the special session of the Legislature the past month. However, with it all I am sure we have progressd, and I congratulate the Medical Society of Delaware on the work they have done.

I also take this opportunity to thank the officers and members for their co-operation in all of the activities that have been undertaken during the past year.

We will now have the report of the Secretary.

...Secretary Speer read his report as follows:

Report of the Secretary

In submitting my report to you, I will take up first the matters dealing with the major organization of the medical profession, namely, The American Medical Association.

The business transacted with them during the year has been in form of correspondence, with two exceptions. First, the attendance of our delegate, Dr. James Beebe, to the Convention in Cleveland and secondly, my visit, accompanied by Dr. Bird, the editor of our state Journal, to Chicago at the combined meeting of all state secretaries and the editors of all state journals. The report of Dr. Beebe's visit we will hear from him. The meeting in Chicago which I attended was instructive and pointed out to me a great many problems which the profession in other states has to contend with, but from which we are free, due mainly, I believe, to our limited size. These problems are too numerous to mention here, as they do not concern us. I want to say here that our own editor, Dr. Bird, read a very worth-while paper on the "Some Problems of a State Editor." To my mind, and to the mind of nearly everyone present, it was as important and as instructive as any paper read. Dr. Bird received a great "hand" and favorable commendation from everyone.

The correspondence referred, in a great number of instances, to what is being done in this state in regard to different matters. These I answered myself; in some cases I replied to the letters after consultation with those informed on the subject at hand.

Some of the correspondence referred to bills pending in the Congress and were answered along the lines requested. Other correspondence was of routine nature.

The next thing in order was the arrangement in conjunction with the Kent County Committee on Arrangements of the State Program for this present Convention. I hope it meets with the approval of all. One of the obstacles was the fact that nearly all of the large drug and instrument companies informed us that their budget for advertising did not include exhibiting at Conventions.

One particular thing was a letter from a group of physicians in New York who were sponsoring a great number, over two hundred, physicians who had left Germany and wanted to be placed here. They had a great number of representative members in this profession on their membership, and the letter said that what they intended to do was to put a few doctors here, and a few doctors there, and it also stated that they had done that in New York to the extent that they did not feel they could place any more.

I replied by saying that I did not feel that we in Delaware cared to place any of those men, and that I was personally not in agreement on the thing. I asked them what they thought the reaction would be in foreign countries if a group of American physicians went over and said, "We would like to practice in your country without any examination." I had no reply from them as to whether they were of opinion American doctors could do it or not.

Among the miscellaneous things which have come into the office are letters asking the Society to sponsor certain schemes and lectures. In each instance, I informed the correspondent that as a Society we were not interested. One of these letters was from "The Emergency Committee in Aid of Displaced Foreign Physicians." I replied by informing them that we were "over-doctored" in Delaware now and advised that we did not care to sponsor any of their men.

One of them was to sponsor a German lecturer who was going through the country lecturing on sex subjects. He wanted so much advertising and he wanted so much money guaranteed before he would go to the different towns and states to lecture. I considered it was a racket and that this man was merely trying to make some money, so I told them that as a Society we were not interested.

A communication received from both the American Medical Association and the Illinois State Medical Society inclosed a resolution, a copy of which I am submitting for action.

The Committee on Economics of this Society had two meetings to confer with the Relief on "fees." As you all know, our Relief Commission ceased to exist as a State Organization in April, and therefore, all of our actions were cancelled.

The work on the Program for this Convention was started early and I hope that all are satisfied with it. We at first decided that an evening meeting would not be attempted; but two weeks ago our President thought that it would be to the best interests of the profession for such a meeting to be placed on our program, and it was arranged for accordingly.

I want to thank everyone for his co-operation, as this office cannot function properly unless each and every member takes an active part when asked to do so. Your secretary is only too willing to aid you in every way that he can.

During the present year we have not had to prosecute anyone for illegal practice. During the next year, which will be a legislative one, I wish to admonish each member of the profession to be on the alert for any legislation which might be contradictory to the profession as a whole. And if any such matter arises, please inform the office of the secretary at once.

Respectfully submitted,

William H. Speer.

President McDaniel: We will now have the report of the Treasurer.

Treasurer Heck presented his report as follows:

Report of the Treasurer

General Fund		
January 1st, 1934—Balance forwarded		$337.31
Receipts		
Dues, New Castle County (129)	$645.00	
Dues, Kent County (27)	135.00	
Dues, Sussex County (28)	140.00	
Dividends: Bank Stock	56.00	
Total		976.00
Total		$1,313.31
Disbursements		
Subscriptions to Journal	386.00	
Secretary's Supplies	45.02	
Badges for annual Session	17.00	
Lawyers' fees, stenographic work	130.00	
Medical Defense Fund	184.00	
Flowers	23.50	
A. M. A. Directory	12.00	
		797.52
October 8th, 1934—Balance on Hand		$515.79
Defense Fund		
January 1st, 1934—Balance forwarded		$3,003.47
Receipts		
Dues, per capita	184.00	
Interest on Deposits	111.95	
		295.95
October 8, 1934—Balance on hand		$3.299.42

Respectfully submitted,

A. L. Heck.

In explanation of the item "Lawyers' Fees, Stenographic Work $130." Dr. Heck said:

I might say that that item was ordered paid by the special meeting of the House of Delegates at Farnhurst in 1933, and should have been paid last year.

Dr. E. R. Mayerberg: I move that the report of the Treasurer be accepted and filed.

Dr. Bird: That has to be audited by the Council, doesn't it?

President McDaniel: Yes.

Dr. I. L. Chipman (Wilmington): I would like to call attention to the fact that there should be an auditing committee appointed at this time.

Secretary Speer: The auditing committee is set by the By-Laws.

President McDaniel: Report of the Councilors! Dr. Booker appears to be the only one here.

Report of the Councilors

Dr. Lewis Booker (New Castle): There has been no business before the Councilors this last year, Mr. President.

President McDaniel: Report of the Committee on Scientific Work!

Report of the Scientific Committee

Secretary Speer: Mr. President, as stated in my report as Secretary, the work of the scientific program was begun early in the spring, and we tried to have the program marked with the appearance of our own members to as great an extent as we could. We tried to give you a balanced program, and I think that we have been able to do this, and that all interests of the different sections of the profession have been represented.

President McDaniel: Report of the Committee on Public Policy and Legislation, Dr. J. B. Niles!

Report of the Committee on Legislation

Dr. J. B. Niles (Townsend): There is nothing to be reported by the Public Policy and Legislation Committee.

President McDaniel: Report of the Committee on Publication!

Dr. W. Edwin Bird read his report as follows:

Report of the Publication Committee

As heretofore, we transmit herewith the report of the Publication Committee in two sections: (1) that of the Editor, and (2) that of the Business Manager.

Report of the Editor

1. We are nearing the end of the sixth year of the New Series, and despite the continued economic distress we have maintained a journal of the same size and character as we did when times were better.

2. We have printed all the transactions of this Society, together with some of those read before the county societies, as well as some that were contributed. We reiterate our plea that our members send us more contributions of a scientific nature.

3. We also request that our members keep us advised of the personal items of interest that occur; we are lacking in personal and hospital items, as compared with the other journals.

4. The relations within the Committee remain most cordial. The new Secretary has been very cooperative. Also, during the year there has been a necessary change in our printers. We deem it only fair to state that our new printers, the Star Publishing Company, have been giving us an excellent service.

5. We attended the Annual Conference of Secretaries and Editors at the A. M. A. headquarters in Chicago last month, where we read a paper entitled ''Some Problems of a State Medical Editor,'' which was well received and generously discussed.

6. We continue to show a small financial profit for the year's operations. This is due to the fact that no salaries are paid to the editorial or business staff. The report of the Business Manager will give the exact figures.

Respectfully submitted,

W. Edwin Bird.

Dr. Bird: Dr. Tarumianz asked me if I would present his part of the report.

Dr. Bird read the prepared report of the Business Manager of the Delaware State Medical Journal, as follows:

Report of the Business Manager

September 25, 1933 to October 8th, 1934

Checking account, Sept. 25, 1933	$ 199.90	
Savings account, Sept. 25, 1933	3,732.16	
		3,932.06

Receipts

Advertisements*	$1,951.28
Subscriptions, Medical Society members	386.00
Subscriptions, others	8.00
Rebate from American Medical Association	57.92
Rebate on cuts	10.18
Total receipts	$2,413.38

*In addition to this, $28.00 was received from Cann Bros. for their advertisement, through deduction from their monthly bill.

Disbursements

Printing and mailing Journal	$1,722.70
Miscellaneous postage	10.00
Envelopes and letterheads printed	44.50
Notary fees	1.50
Membership, American Editors' Association	21.00
Stenographic services	74.00
Reprints	20.30
Editorial expenses	25.00
Cuts	107.77
Repairing cuts	6.12
Binding Journals	6.00
Tax on checks	1.00
	$2,039.89

Operating balance	$373.49	
Interest on savings acct.	114.44	
	487.93	487.93
Total, October 8th, 1934		$4,419.99
In savings account, Wil. Trust Co.		4,046.60
In checking account, Wil. Trust Co.		373.39
Total balance		4,419.99
Still due from July, August and September advertisements, approximately		231.00

Summary for Five Years, Ten Months

January, 1929 to October 8th, 1934

Receipts

Advertisements	$12,946.07	
Subscriptions, Medical Society members	2,074.00	
Subscriptions, others	230.00	
Rebates from American Medical Association	582.31	
Rebates on cuts	54.78	
Sample copies	7.80	
	$15,894.96	
Interest on savings account	379.43	
	$16,274.39	$16,274.39

Disbursements

Printing and mailing	10,564.41	
Miscellaneous postage	55.80	
Stationery	274.13	
Notary fees	5.25	
Stenographic services	360.86	
Membership, American Editors Association	99.00	
Membership, Periodical Publishers' Institute	10.00	
Reprints	20.30	
Binding Journals	27.00	
Tax on checks	1.84	
Convention expenses	150.00	
Editorial expenses	37.00	
Repairing cuts	6.12	
Cuts	107.77	
Editors' convention	134.92	
	$11,854.40	$11,854.40
		$4,419.99

Respectfully submitted,

M. A. Tarumianz.

Dr. E. R. Mayerberg (Wilmington): I move the Publication Committee's report be accepted and filed. I also move that the House of Delegates give this Committee a rising vote of thanks for the excellent work they have done throughout the year and for The Journal that they put out, which is comparable to any put out by any state society in the country, notwithstanding the difference in size of the states.

Dr. Bastian: I second that motion.

...The motion was adopted by the members arising amid applause...

President McDaniel: The report of the Committee on Medical Education by Dr. E. R. Mayerberg!

Dr. E. R. Mayerberg presented his report as follows:

Report of the Committee on Medical Education

In spite of increased requirements for admission to class ''A'' Medical Schools, and raising of medical standards in all of the states of the Union, there continues to be an ever increasing and unlimited number of physicians going out into practice each year.

There is a surplus of twenty-five thousand today. This estimate is the official American Medical Association's figure, based upon the population of the country in ratio to the number of physicians in practice.

The medical colleges are limiting their classes and each year finds them with long waiting lists. They can and do hand pick their students, but even so they are graduating more than the country can absorb.

Many of the students who cannot meet the requirements of American colleges are going abroad to study, and many of them are returning to this country and are succeeding in locating in many states where they do not have laws as stringent as the Delaware laws, which bar graduates of foreign schools.

When there is an excess of a class of workers or professional people of any sort it means ultimately a lowering of standards, cut-throat competition, and a loss of respect from the public. It means that if we continue to have men and women dumped into the medical field that we will eventually be headed for state medicine, and the irony of it will be that medicine will beg for it.

In every large city in this country today there are hundreds of professional men of all types and classes driving taxicabs, working as waiters and cleaning streets, and a large portion of them are physicians.

It is time to do something before it is too late, and before the practice of medicine is reduced to a mere trade.

Our medical college requirements should be still further raised, and the classes should be reduced by half so as to attack the evil at its source.

The supply or birth rate far exceeds the death rate. We need a medical birth control.

Our own state has reached a point of saturation. We have a good supply of regulars from recognized colleges, and an over abundance of irregulars. If we try to absorb many more we will have to face the keenest kind of competition, which will produce a cutting of fees, non-professional acts, and even charlatanism. We will degenerate into a position little higher than that occupied by the quacks.

Our good roads, better methods of transportation, easy accessibility to good hospitals in all parts of the state, mean that the people of our state have ample medical protection.

There has been no increase in the population of this state in the past ten years. In fact, there has been a decrease, but in spite of that we have about a third more physicians practicing in Delaware than we had ten years ago.

Where are we headed?

In 1931 fifteen were admitted to practice, by examination, and 5 by reciprocity, a total of 20. In 1932 eighteen took the examination and fourteen passed; twelve were admitted by reciprocity. In 1933 twelve were admitted. In 1934 there were forty-three applicants, but only nineteen were permitted to take the examination and twelve passed.

There is a general feeling throughout this great land that Delaware has not been touched by the depression, and that our state is overflowing with milk, honey and gold, hence the flocking of physicians to this State.

Your committee feels that while all this may seem like an economic question, it is at the same time of vital importance to everyone of us. The time has come when we must protect ourselves. If the recommendations we are about to make seem daring and are not possible under existing laws, let us make provisions for changing the laws.

We recommend that the Medical Society urge the leaders of the American Medical Association to exert every effort to improve the standards of all medical colleges, that a drastic reduction in the number of students be made, and that all State Boards stiffen the examinations. For our own state we recommend that our Examining Boards and our Medical Council be asked to give fair but rigid tests, and that each candidate be personally interviewed by the members of each Board in general session, weeks before the examinations are given so that the members of the Boards will have the opportunity to study the appearance and general qualities of each candidate. This survey of the applicants should have as much to do with passing the test as the written examination.

Our medical practice act is so liberally constructed that it gives the Medical Council and the Examining Boards wide discretionary powers. No person can take the examination now unless he has the approval of the Medical Council. All that is needed is a little tightening up and a free exercise of the Council's discretionary rights.

We recommend that reciprocity be discontinued with other states indefinitely.

We recommend that State Board Examinations be held less frequently.

We feel that under the present condition of saturation once every other year would be often enough for examinations to be held, and we recommend that the Medical Council make a yearly survey and if there has been no material reduction in the number of physicians in the state that they announce in the medical journals that no examinations will be held this year or next year or next, etc., until at the discretion of the Council it is really necessary to admit more Doctors into the state.

These measures are drastic we know, but if we are to prevent an overcrowding followed by degeneration of the medical profession in Delaware, we must take measures now before it is too late.

Respectfully submitted,

Emil R. Mayerberg.

Dr. Harold Springer: Let me make a comment about this excellent report of Dr. Mayerberg's. As Secretary of the Medical Council I suppose I am more or less qualified to speak somewhat on this subject.

I want to say, first of all, I think it is a very excellent report, and I cannot think of any part of it with which I do not agree. There is no doubt about the fact that we will have to do something to keep from being overcrowded here. Of course these recommendations as made by Dr. Mayerberg, most of them the Medical Council under our present act cannot carry through.

There is another very important thing about them: All of the members of the Medical Examining Board are smarting a little bit—I know I am—because we were approached by a great many of the members of the medical profession to stiffen up this last examination, which we did in two or three ways. We have to comply with the law and take a man who can qualify under our law, of course. We stiffened up our examination a little bit. They were all fair, but we made two new rules particularly, which I think we have a perfect right to do under the laws of the state, at least the Chief Justice said we had. One was that every man had to obtain an average of 75 per cent in every branch, which is rather a difficult thing to do. The other one was that we wouldn't take anybody by reciprocity until he had practiced two years in the state from which he was originally licensed.

Now that brought a lot of criticism on us, of course, but the most difficult part for us to bear, and the part that we smarted about, was that some of the very members of the Society who had asked us to tighten this thing up were the very ones who criticized us after we had done so because certain of their friends did not get through.

If we are going to tighten this thing up the profession has to back up the Medical Examining Board, or else we cannot get away with it. We have a pretty good Medical Practice Act, and, as Dr. Mayerberg pointed out, the Council have quite liberal powers. Naturally we have to make a reciprocity arrangement because if we are going to reciprocate with other states we have to have a similar requirement to theirs in regard to reciprocity. For instance, the District of Columbia has two years, New York has five years, some states have none, five states won't take anybody under reciprocity, while still others have one year.

Under our present Medical Practice Act we have to take anybody who applies that is qualified, but I think we had something like ten or twelve who applied for reciprocity and we only took one. I think we made a mistake probably in taking him, but he had practiced in some place for a number of years, and we had no way that we could turn him down. However, if we had had the authority to scrutinize all of these people, and if they didn't meet with our judgment, to turn them down, I think probably we could have turned him down, too.

As to the examination, there was not a single man who failed that did not fail in anywhere from three to five branches, yet we had considerable criticism. We can make this thing hard enough, the Medical Council, if the profession will only back us up. I want to say again that I certainly enjoyed that report, and I agree with Dr. Mayerberg.

Dr. Bird: I would like to ask Dr. Springer if, in view of his approval of the report, which would involve changes in the Act, he was prepared to go before the Legislature with some proposition. Do you think it is a feasible thing to do? The Legislature meets in January; and if you think it is feasible, I consider it would be your Board that would be the one that should get the Bill together.

Dr. Springer: It is a thing that we will have to be very careful about because I understand that the cults are preparing themselves with a great deal of effort and energy, and also money, to make their foothold stronger. We have really a very good Medical Practice Act, but if we could change it, for instance, in some of these ways, to hold a meeting only when we thought it would be necessary, that would be a great help. If you could give the Medical Council or the individual Boards, as they now stand, the authority to scrutinize every applicant, I think those two things would serve a great purpose because the other things we can handle pretty well. However, if we are going to change the Medical Practice Act in a great many other ways, I think I would be rather against it, because there will be a series of dickering and trading, and I am afraid we will spoil the Act; but those two or three little things that I have outlined would help.

Another thing we could do would be to raise the fee requirement. Instead of charging $50 for reciprocity, if we would charge $100, I think that would keep a lot out. For examination, instead of charging $10, if we charged $25, that would keep a lot out. They think this is a great place. We had over forty applicants last year; I think we took about 18. Already now for the December meeting I think there are about 25 who have applied, foreign graduates and all kinds. Of course, we say we cannot take foreign graduates because we claim we have no way to check their credentials; but it is getting worse all the time.

Dr. Bastian: I move the report be accepted.

Dr. Springer: I second the motion.

...The motion was put to a vote and was carried...

President McDaniel: Report of the Committee on Hospitals, Dr. Stanley Worden and Dr. Richard Beebe, who was appointed in the place of Dr. Marshall, and Dr. John Pierson.

Dr. I. W. Mayerberg: I have been requested by Dr. Worden to give this to the Secretary.

President McDaniel: I ask that the Secretary read the report.

Secretary Speer read the prepared report of the Committee on Hospitals, as follows:

Report of the Committee on Hospitals

It was necessary to alter the original composition of the Committee due to the illness of Dr. Samuel Marshall and the person appointed in his place was Dr. Richard Beebe. The committee held three meetings with full attendance at each. There was some question as to the scope of the Committee's work, but we decided to use the reports of previous surveys as a guide to our activities. In this place it might be fitting to question whether it should be within the province of this particular Committee to inquire into other phases of hospital functionings than the purely physical side. There are such questions as staff composition and relationship between the lay boards and the staff, and, in general, the more human angle of hospital activities. Another suggestion of your Committee is that, in the future, it be so organized as to provide for hold-over members. This, we feel, might work for better continuity of effort.

Homeopathic Hospital, Wilmington, Delaware. Bed capacity, 165; internes, 6.

This hospital is a new fireproof structure with adequate provisions for fire escapes. In general this Committee feels that it is excellently equipped and properly appointed. The 1933 recommendations were: First: the continuance of the present policy of improving the departments of the institution with emphasis on social service. This is being done. Second: resident pathologist or more intimate contact with the consulting pathologist. The consulting pathologist visits the hospital regularly and there is adequate pathologic service. The only specific suggestion this Committee has to make is that more space be provided for the out-patient service.

Delaware Hospital, Wilmington, Delaware. Bed capacity, 200; internes, 6.

The 1933 recommendations have not been complied with, with the exception of alterations in the operating room suite. The institution is apparently deferring major improvements, the necessity of which they are fully aware because of the projected new building plan. The likelihood of this program being carried out in the near future seems doubtful, and this Committee feels strongly that the recommendations previously made should be complied with, this particularly in relationship to the autopsy room, the question of fire escapes, first stage or accessory delivery room. In addition we cannot criticize too strongly the method of storage of the patient records, at present these are stored on open wooden shelves.

Wilmington General Hospital, Wilmington, Delaware. Bed capacity, 110; internes, 3.

This hospital is relatively new and has modern and full equipment. The 1933 recommendations referred to the inadequacy of the children's ward. No change has been made. Second: the use of the same room for gynecology and urology. This has been improved. Third: a delivery room separate from the operating room. There has been no change here and the present Committee also feels strongly that such provisions should be made. Fourth: a nurse whose duties would be solely in the nursery. This change has been made. Fifth: increase of ward beds. No change. Sixth: condemnation of the practice of having nurses do some routine laboratory work. The laboratory equipment is good and this Committee joins with that of 1933 in condemning the practice of entrusting the laboratory work to the student nurses. We feel that the hospital needs more ward beds, that the practice of mixing the white and Negro races in the ward should be discontinued, that the obstetrical unit should be rearranged, and that the nurses' activities should be confined to nursing duties. This last obviously requires greater technician services in the laboratory.

ST. FRANCIS, Wilmington, Delaware. Bed capacity, 75; internes, 3.

This hospital has a very active out-patient service and its quarters are distinctly crowded. Further the dispensaries are without direct supervision of a staff member. This, we feel, is an improper practice and could readily be corrected. Specific recommendations are either a larger or more minor operating room space be provided, that the scrub-up room be placed closer to the operating room, that a special obstetrical department be installed, that treatment rooms be provided on each floor to be used for no other purpose. At present the dressing carriages are kept in the rooms for bed pan disposal. The hospital in general is quite crowded and apparently is functioning under difficulty not of their own seeking. The records were found to be in excellent condition.

BRANDYWINE SANITARIUM, Marshallton, Delaware. Capacity, main building, 81; children's building; physicians, 3 full time.

The children's building has been open since the last inspection and is at present not completely filled although this is not due to lack of readiness on the part of the institution. The children's building is quite modern and every provision has been made for the care of youthful tuberculosus. We have no recommendation to make in connection with this building. The main building is woefully inadequate both to meet the needs of tuberculosis in the state and to meet the needs of the patients that have been crowded into its walls. Originally designed to accommodate forty-eight patients, it now accommodates twice that number. The toilet facilities, wash stands, diet kitchen, are all services that are being stretched to their upmost in an effort to accommodate a larger number of patients than that for which they are designed. The hospital needs interior painting, the fire escapes are inadequate, the elevator is antiquated and we feel there should be some provision for recreation space for patients of this type. This Committee strongly urges that representation be made in an effort to provide proper care at least for the patients now in the Sanitarium.

DELAWARE COLONY FOR THE FEEBLE-MINDED, Stockley, Delaware. Present census, 365; physician visits daily.

The capacity of the institution has increased fifty since last year. This Committee was much impressed by this hospital. It feels that the administration is vigorously active in its effort to improve its facilities and provide good care for its charges. It is suggested that the services of a resident physician with psychiatric training might lead to a classification of the residents with the possibility of a greater percentage of rehabilitation. The infirmary, itself, has adequate facilities for an institution of this character. Surgical cases, cases requiring x-ray, are taken to a near by general hospital.

DELAWARE STATE HOSPITAL, Farnhurst, Delaware.

This Committee did not enter into detailed inspection of this hospital since it felt that the profession in general is well acquainted with the present circumstances and the needs of the institution. We did, however, inspect the new unit installed in the reconditioned New Castle County Almshouse. This is being used as a receiving ward accommodating some eighty patients. Elaborate changes have been made to fit the old building for its present needs. Specifically we can urge the addition of a children's building since the present method forced upon the administration of caring for children upon the adult wards is very objectionable.

WELFARE HOME, Smyrna, Delaware.

Present population 333, which is one hundred over capacity. Forty to fifty patients confined to beds. Only one physician, who also acts as the administrative head of the institution. We feel this is quite inadequate. This hospital is only getting under way. At present the laboratory is not functioning and there is no x-ray equipment. A surgeon visits the hospital on call, as do several medical men. There is only one elevator in the building. Recreation facilities are inadequate, other than a building wide system of radio outlets. This Committee questions the economic wisdom of installing complete obstetrical facilities and the allotment of such space for a type of service that averages one and one-third patient per month.

KENT GENERAL HOSPITAL, Dover, Delaware. Capacity, 39; interne, 1.

The 1933 recommendations have not been met with the exception of painting and redecorating. This painting has been steadily carried forward. The hospital has acquired a mobile x-ray unit since the last inspection. This Committee specifically recommends: First: continuation of the efforts to improve the outward appearances of the hospital. Second: more outside fire escapes are urgently needed. Third: the reorganization of the facilities for the delivery room. At present there is no running water in the delivery room or nursery. The records have been greatly improved due to the activity of the interne.

MILFORD EMERGENCY HOSPITAL. Capacity, 39; internes, none.

Other than the constant effort to maintain the hospital through the medium of painting, improved flooring and draperies no specific improvements have been made since last year. In view of the fact that the management is actively engaged in a plan for new quarters this Committee has failed to make specific recommendations relating to the plant itself; however, we feel that the hospital needs a mobile x-ray unit and we question the wisdom of the method that provides for the technician taking the patients' history. We also feel that a bed pan sterilizer is badly needed.

BEEBE HOSPITAL, Lewes, Delaware. Bed capacity, 65; internes, 1 in winter, 2 in summer.

This hospital is in good condition. The equipment for patient service is adequate and modern. The records are well kept and filed. The kitchen has been redecorated since last year but is obviously too small to meet the needs of the hospital. The laundry is crowded and improperly arranged. The laboratory could well use more space. Competent technician is in daily attendance.

Respectfully submitted,

STANLEY WORDEN.

DR. E. R. MAYERBERG: I move that the report of the Committee on Hospitals be accepted.

DR. BASTIAN: I second the motion.

...The motion was put to a vote and was carried...

DR. SPRINGER: Shouldn't those recommendations be sent to the individual hospitals?

PRESIDENT MCDANIEL: They are so sent.

Report of the Necrology Committee! Dr. W. T. Chipman couldn't be here, so he asked the Secretary to read his report.

Secretary Speer read the prepared report of the Necrology Committee, as follows:

Report of the Necrology Committee

Lewis Heisler Ball, Faulkland, Delaware

Born September 21, 1861. Graduated from Rugby Academy, 1879, University of Delaware, 1882, and University of Pennsylvania in 1885.

Was elected State Treasurer, 1898, elected Representative to Congress, 1900, and to the U. S. Senate in 1918 for six years. Practiced his profession at Faulkland except when called from private practice to public service.

He was endeared to the public both professionally, and politically, and served his State and nation well and with credit.

Died October 18, 1933, of general arterial sclerosis. Age 73 years.

Cecil DeJ. Harbordt, Dover, Delaware.

Born December 3, 1885 in Brooklyn, New York. Educated in private schools in New York City, also New York University in music. Graduated from University of Maryland School of Medicine in 1905, came to Delaware in 1907. Practiced in Wilmington for a short time, then went to Dover where he practiced until his death.

He was a member of the staff of Kent General Hospital, also on the courtesy staff of several other hospitals in the State. Was interested in politics having served as Secretary to the Kent County Republican Committee.

Died November 6, 1933, in Delaware Hospital, Wilmington, of purpera. Age 47 years.

William H. Hancker, Farnhurst, Delaware

Native of Philadelphia, educated at Girard College, graduated from Jefferson Medical College in 1873 after which he became assistant to Dr. D. D. Richardson in the mental department of the Philadelphia Hospital until 1875. He was Superintendent of the Northern Hospital for the Insane at Winnebago, Wisconsin, for several years, coming to Delaware in 1890 as assistant superintendent of Delaware State Hospital and on resignation of Dr. Richardson became superintendent and served in that capacity until 1926 when he resigned because of ill health.

Dr. Hancker was regarded as a great asset to the State in that branch of medicine known as psychiatry. He was a member of the American Psychiatric Association, American Medical Association, Medical Society of Delaware, and New Castle County Medical Society.

Died December 29, 1933.

Luther S. Conwell, Camden, Delaware

Born September 30, 1859, near Camden, Delaware. Was a graduate of Jefferson Medical College in 1884. Practiced in Camden for fifty years. Was at one time President of the State Board of Health, showed great interest in the State and County Medical Societies serving them as President and Secretary. He was particularly interested in the scientific papers read before the Societies.

Was interested in politics having served in both branches of the Legislature from the district in which he lived.

Died February 5, 1934, of a heart attack. Age 75 years.

Joseph Bringhurst, Felton, Delaware

Born at Booth's Corner, Pennsylvania, September 15, 1871. Received his primary education at Friends' School in Wilmington, Delaware and Swarthmore College. Graduated in Medicine from the University of Pennsylvania in 1889.

Practiced in West Chester eight years, moved to Harrington in 1916 and to Felton in 1919. He practiced here until his death.

He was a member of American Medical Association, Delaware State and Kent County Medical Societies, was a charter member of the Milford Emergency Hospital, served as Anaesthetist of the same institution, and taught Medicine to the student nurses there. He was noted for his charity and his absolute unselfishness.

Died February 6, 1934, of cerebral hemorrhage. Age 63 years.

Peter W. Tomlinson, Wilmington, Delaware

Born November, 1859, at Jones' Neck, Kent County. After attending public schools he entered Jefferson Medical College, graduating in 1878. He practiced in Milton, Delaware, for five years. He went from there to the General Assembly.

He then took up practice in Wilmington where he continued actively until retirement in 1930.

He served as both President and Secretary of the Medical Society of Delaware, President of the State Medical Examining Board, and for a number of years was Medical Director for the Continental American Life Insurance Company. Was a member of the National, State, and County Medical Societies.

In the death of Doctor Tomlinson the Medical profession has lost one of its most beloved and noblest characters.

Died in Beebe Hospital, Lewes, Delaware, July 25, 1934, following a brief attack of pneumonia. Age 84 years.

John B. Derrickson, Frederica, Delaware

Born, 1876, near Frankford, Delaware. Received his early education in public schools, then entered Medico-Chi Medical School, was there two years when it was taken over by the University of Pennsylvania where he graduated in 1898.

Practiced in Frederica from 1899 to 1930 when he became affiliated with the Board of Health, serving as county physician of Sussex County until his death.

He was a member of the National, State and County Medical Societies and had served as President of the State Society. Was a Director of the Milford Building and Loan Association.

Dr. Derrickson was a man of splendid character, and a pleasing personality and was well known throughout the State. He was very much interested in agriculture and stock farming, having at one time owned quite a number of valuable horses.

Died October 3, 1934, in Milford Emergency Hospital of a heart attack. Age 59 years.

Respectfully submitted,

W. T. Chipman.

Dr. E. R. Mayerberg: I move that the report of the Necrology Committee be accepted and filed, and that the House of Delegates arise and stand in silence for one minute in honor and in memory of the departed members.

Dr. T. H. Davies: I second that motion.

...The motion was carried by the members arising and standing for one minute in silence...

President McDaniel: We will have the report of the Advisory Committee, Women's Auxiliary. Dr. Davies!

Report of Advisory Committee, Women's Auxiliary

Dr. T. H. Davies: I have not any report to make. The chairman is not here, so suppose I can only report progress.

President McDaniel: The report of the Committee on Cancer!

Secretary Speer: Dr. McElfatrick asked me to read his report.

Secretary Speer read the report of the Committee on Cancer, as follows:

Report of the Committee on Cancer

At a meeting of the Cancer Committee the status of the cancer situation for the past year was reviewed, with the following conclusions:

That under the direction of the Delaware Committee of the American Society for the Control of Cancer five clinics for the purpose of examination, consultation, and suggestion of treatment have been operating for a year.

That the periodic examination of patients known to have cancer has been carried on wherever possible, with the result that there is now available a system of records which will soon enable us to compare the results of cancer control in our state with those of other states in which programs of cancer control have been instituted.

That the free tissue diagnosis service, at 14th and Washington streets, Wilmington, which is available to any recognized physician or institution in the state, has examined 184 specimens submitted, of which 68 proved to be malignant. This figure of approximately 33% malignancy, compares with figures from clinics which have been operating for much longer periods of time.

To have these 66% of questionable lesions examined proved the fine co-operation with which the physicians of the state have entered into this campaign for the early diagnosis of cancer, and means that the disease will be recognized while it is amenable to treatment.

July 6, 1934 was the first anniversary of organized tumor clinics in this state. There are five clinics located in four cities: Milford Emergency Hospital, Milford; Kent General Hospital, Dover; Beebe Hospital, Lewes; Delaware Hospital, and Wilmington General Hospital, Wilmington. A total of 103 patients have attended these clinics for this year.

Records of 437 patients have been made on standard forms of the American College of Surgeons, and incomplete records of 224 additional patients. It is estimated that there are approximately 800 cancer patients in the state of Delaware. One-half of these have been located.

The biopsy will help in making a possible diagnosis, and grade the type of tumor, which gives considerable information in regards to what form of treatment to institute.

Recently there was a campaign of cancer education which was run in the daily papers for about five or six weeks, and several radio talks were delivered at this time.

Respectfully submitted,

George C. McElfatrick.

Dr. MacCollum: I move that the report be accepted.

Dr. I. W. Mayerberg: I second the motion.

...The motion was put to a vote and was carried...

President McDaniel: Report of the Committee on Syphilis, Dr. I. L. Chipman!

Dr. Chipman read the report of the Committee on Syphilis, as follows:

Report of the Committee on Syphilis

The Committee has not considered any means, or has anything to suggest along the lines of real control, but thought it might be possible to suggest and consider license and health examination of all prostitutes, as well as the proper propaganda and instructions in our high school at some future date. The present report will deal with strides made since the organization of this committee.

In New Castle County there are three clinics. They are well organized and properly manned, and we find the spirit in each of these is to teach those infected with syphilis of its sequela and he be made to feel the spirit of wanting to further the program by bringing in cases known to or suspected by him. Much good we find is being done in this way.

The present arrangement of these clinics is all that is to be desired, at this time, but the problem "syphilis" in rural districts of Delaware is slightly different from that in the New Castle area. Due to the fact that there is a more scattered distribution of poorer classes, especially colored, that seem to be more prone to contract the disease. Also, the facilities for treatment of the clinic patients are not as convenient due to the fact that they must travel a longer distance to the clinic and also, that this type of patient does not have transportation facilities to carry them regularly to the clinic. This makes it difficult for them to receive regular and proper treatment. Furthermore, the educational work carried on by various health centers has not reached the rural population to the extent that it has in the industrial centers. As a result, they are less familiar with the nature of the disease and with the necessity of receiving proper treatment. However, it is true that more and more of these cases are being recognized by the rural physicians who are either treating them in their offices or referring them to the clinic. It is also true, that among the better class syphilis may be more widely spread, due to the extensive transportation developments, resulting in a more diverse mingling of the population in various localities.

It is possible that the apparent increase in the number of cases of syphilis is not due to an increase in the number of new cases, but to the fact that we now have better facilities for the recognition of the disease and also that physicians are more alert in diagnosing the cases. In regard to the treatment, it is probable that the private patient is receiving fairly adequate treatment, while the indigent class present a more difficult problem. With the present clinic facilities, while it is not possible to treat all cases until they are discharged as cured, however, it is possible for them to receive sufficient treatment to prevent them from being a menace to the public.

In quoting the secretary of the State Board of Health: I believe that very material improvement has been made in the past year or two in connection with the reporting of venereal disease to the State Board of Health. In the report received from the Public Health Service indicating the rate for syphilis for all of the states of the Union, you will see that during the month in question the Delaware rate was exceeded by Mississippi and Massachustts, in so far as syphilis was concerned. This is not an experience for one month alone, but represents the condition which can be noted in almost every monthly report coming in. It indicates, I believe, that the medical profession is assisting the State Board and Public Health Service to an extent very much greater than is met with in a large majority of the states. The total number of cases reported to the State Board during the year were: 752 cases of syphilis, increase in the number of cases of this disease reported 397 over the figure of the former year. This means quite an increase and indicates that the medical men are responding very satisfactorily indeed to the requests which are being made on them.

Right here, the survey in which all medical sources have been contacted in representative communities throughout the United States has revealed that the monthly rate per ten thousand population, is 6.6 for syphilis. Our clinic work has shown evidence of similar expansion. In all the clinics maintained by the State Board there is now a total of about 8,500 cases of syphilis. We gave last year 3,856 doses of arsenic, and 5,658 doses of bismuth and mercury. In the former year, 3,975 doses of arsenic were given, and 4,405 of bismuth and mercury. It is expected quite soon that another center for the treatment of venereal cases will be opened in Georgetown to supply

Delaware State Board of Health
A SCHEME OF TREATMENT FOR EARLY SYPHILIS

Day or Week	Arsphenamine	Interim treatment	Blood Wassermann reaction	Remarks
Day				
1	0.3-0.6	....	1	Arsephenamine dosage for first 3 injections at level of 0.1 gram for each 25 pounds body weight. Average subsequent dosage, 0.4 gram men; 0.3 gram women.
5	.3-0.6			
10	.3-0.6			
Week				
3	.4			
4	.4			
5	.4			
6	.4			
7	.4	....	1	If mercury is used note overlap of 1 week at end of first and start of second arsphenamine courses. No overlaps necessary with bismuth. At this point a few days without treatment may be dangerous. Neurorecurrence.
8	....	Bismuth, 4 doses, 0.2 gram and K.l. or Ung. Hg. and K.l.		
9				
10				
11				
12	.4	....	1	Arsphenamine starts, bismuth stops. Watch for provocative Wassermann reaction after first dose of arsphenamine.
13	.4	....	1	
14	.4	....	....	Try to prevent short lapses in treatment, especially at this early stage.
15	.4			
16	.4			
17	.4		1	
18-23	....	Bismuth, 6 doses, or Ung. Hg. and K.l.	....	Bismuth is better than mercury. Use it if possible. Examine cerebrospinal fluid routinely at about this time.
24	.4			
25	.4			
26	.4			
27	.4			
28	.4			
29	.4			
30-37	....	Bismuth, 8 doses, or Hg. and K.l.	....	
38	.4	....	1	
39	.4			
40	.4			
41	.4			
42	.4			
43	.4	....	1	Patients with seronegative primary syphilis may cease treatment here, if blood Wassermann reaction has always been negative.
44-53	....	Bismuth, 10 doses or Ung. Hg. and K.l.	....	Note that bismuth or mercury courses are gradually getting longer—4, 6, 8, and now 10 weeks.
54	.4	....	1	
55	.4	....	....	The average seropositive primary or early secondary patient should have at least 5 courses of arsphenamine.
56	.4			
57	.4			
58	.4			
59	.4	....	1	
60-69	....	Bismuth, 10 doses or Ung. Hg. and K.l.	....	It is safer to finish treatment with bismuth or mercury rather than with arsphenamine.
70-122	(1)	No treatment ...	6-12	Blood Wassermann every month if possible; at least every other month.
123	Complete physical and neurologic examination, spinal puncture, and if possible, fluoroscopic examination of cardiovascular stripe. Thereafter, yearly physical examinations, blood Wassermann every 6 to 12 months. If the two spinal fluid examinations above are negative, this need not be repeated.			

(1) Probation.

(Taken from Public Health Service Publication, Reprint No. 13 V. D. I., 2-20-29).

Notes.

(1) Neoarsphenamine in .6 gram dose closely approximates .4 gram dose of Arsphenamine.

(2) A lengthy and uninterrupted program of treatment should not be undertaken unless it is possible carefully to estimate the manner in which *liver* and *kidney* functions are being affected by treatment.

(3) A careful physical and neurological examination should antedate all treatment.

the needs of Sussex County. I believe that has been done.

One advance made during the year is that resulting from the arrangement made for the payment of physicians who will undertake to give treatment to indigent cases who cannot take advantage of the clinic facilities provided. A number of the physicians have made application to the State Board for permission to treat cases under this arrangement. The permission having been granted the medicine requested is sent together with a case report card. When the course of treatment has been finished the case report card is returned to the State Board indicating the days and amounts of treatment given and the physician's fee is paid. This arrangement is in effect only in respect to those patients who live so far from a clinic or who have no means of transportation so that it is impossible for them to attend.

The problem of preventing congenital syphilis is a simple one. Essentially, one including a blood test in the early examination of every pregnant woman, and prompt treatment of all found with the disease. If this be done, untold physical handicaps would be corrected as well as economic benefit to the state. Right here, all agencies that are promoting child health and welfare should be called on to aid.

We wish again to call to the attention of our Boards of Health the laxity of food handlers and restaurant owners in regards to their carelessness in employment of help. It should be mandatory on their part to have a medical examination made of all employes before being employed. We suggest then, that proper literature and the quotation of the law be put into their hands at intervals by the State Board of Health.

Special attention, by doctors and clinics alike, should be given to those individuals in the infective stage of syphilis and an accurate check and follow-up system should be carried out by our Health Department. Resort to law, if necessary, to see that these individuals are rendered non-infected. Of course, the thoroughness of this work depends upon the size of the budget, suffice to say, enough money should be allotted and spent to make our people safe from these infective individuals.

The Committee is presenting a scheme of treatment for early syphilis adopted and recommended by the Public Health Service of the United States after thorough investigation. This might be used as a guide for all clinics, as well as physicians who wish to treat syphilis thoroughly. The treatment is essentially one of thirty-six doses of neo-arsphenamine, and forty doses of bismuth or mercury, given over a period of 123 weeks. A careful physical examination, blood and spinal fluid Wassermanns and special attention to heart and neurologic symptoms. We recommend that this scheme of treatment be published in The Journal.

The experience of the State Hospital is summarized in the following letter from their superintendent, Dr. Tarumianz:

At your request may I report the following:

During the year ending June 30, 1934, there were 270 admissions, 52 of whom suffered from syphilis. Out of this number, 30 had neuro-syphilis, and in 22 the central nervous system was not involved. In addition to this, we have treated about 25 cases, ambulatory, for neuro-syphilis.

Malaria, hyperpyrexia, and other means of treatment have been used in the care of neuro-syphilis. I hope you will stress the point that the majority of the cases of neuro-syphilis come to the attention of the psychiatrist when they are too far advanced to do very much for them. It will be entirely up to general practitioners to recognize clinically the involvement of the central nervous system, and institute proper treatment with the assistance of general and special hospitals.

Summary

1. There are six venereal clinics in the state: Three in New Castle and three in Kent and Sussex Counties.
2. Rural Kent and Sussex clinics should be expanded to take care of the large Negro population, especially along educational lines.
3. Delaware ranks third in reporting venereal diseases.
4. There have been 752 cases of syphilis reported this year; an increase of 397 cases. 8,500 cases of syphilis treated in our clinics since established.
5. Monthly rate for syphilis in 10,000 population is 6.6.
6. Prevention of congenital syphilis by early treatment of infected pregnant women.
7. Attention Board of Health called relative to syphilitics handling food.
8. A follow-up system be organized and used especially for delinquents in the early stages of syphilis.
9. Budget enough money to carry on the work properly.
10. Suggested scheme of treatment for early syphilis. Public Health Service of the United States recommendation.

I. Lewis Chipman.

Dr. E. R. Mayerberg: I move that the report be accepted.

Dr. I. W. Mayerberg: I second the motion.

...The motion was put to a vote and was carried...

President McDaniel: Report of the Library Committee is next.

Secretary Speer: The report on the Library and the report on the Delaware Academy of Medicine are combined into one.

Secretary Speer read the report, as follows:

Report of the Committee on Library—Delaware Academy of Medicine

Members of the House of Delegates,
Medical Society of Delaware.
Gentlemen:

As this is the first year our Society has had a representative in the Academy and this is the first report, I will start at the beginning and report briefly to the present time.

In 1929 a group of doctors got together and organized a Delaware Academy of Medicine for the purpose primarily of establishing a medical library in Delaware.

On June 1st, 1932 the building at Lovering avenue and Union street, Wilmington was presented to the Academy and was dedicated. On the first floor is the lobby, an auditorium, and cloak room, etc. On the second floor is the large, spacious library and several smaller rooms which are used for stock rooms and private studies.

The work of organizing the library was begun in September, 1933, when a trained librarian and college graduate, Mrs. Ava Taylor Watson, was employed. The nucleus was a collection of 400 books which, with several volumes of various journals, formed the basic collection for the medical and dental library. By means of a special fund for books and journals there have been added 150 volumes of books and 50 journals. Most of the leading journals in this country and also some of the leading ones of Canada, England, Germany, and France come regularly to the library. The journals were selected largely on the basis of citation. The selections of books were made largely but not entirely from various lists furnished, for example, lists from the American Medical Association, Jefferson Medical Library, and the Dental Library of The Thomas W. Evans Institute of the University of Pennsylvania. General medicine and general surgery are well represented in both journals and books, and most if not all of the specialists are included. Besides, there is history and literature of a general medical cultural nature. Books may be borrowed through this library from other libraries granting this privilege, such as the Surgeon-General's Library.

Meetings of the New Castle County Medical Society and of the Dental Society are held regularly in the building. The Academy sponsors scientific meetings. Last year two excellent seminars were held, one on diabetes and one on tuberculosis. This year there were the monthly programs of the clinical pathological conferences inaugurated by Dr. Raymond B. Moore, and in which leading experts were participants. There was always present a pathologist, with numerous pathological specimens, and usually a guest clinician, or a surgeon, or a roentgenologist, or all four in the same evening. These highly educational sessions will begin again this year the latter part of this month. The scientific committee will announce a further program later. In the latter part of November there will be a special meeting of the Academy with an invited lay audience, at which time an authoritative speaker on some appropriate subject relative to medical history will be heard.

The annual dues are $10.00 a year for active members. Those residing 15 miles or more from Wilmington may become associate members for $5.00 a year, but without voting power.

The library is open as follows, except in some of the summer months: Monday, 10 to 5; Tuesday, 1 to 5, 7:30 to 10; Wednesday, 10 to 5; Thursday, 10 to 5; Friday, 1 to 5, 7:30 to 10; Saturday, 10 to 12.

Our nearest professional libraries are in Philadelphia and Baltimore. To have such a complete and efficient library and meeting place in our own state for such activities as referred to should be of incalculable benefit to the medical and dental professions and to the laity as well.

Respectfully submitted,

W. O. LaMotte.

Dr. Bird: I move the report be accepted.

Dr. Bastian: I second the motion.

...The motion was put to a vote and carried...

President McDaniel: Report of the Committee on Criminologic Institutes!

Secretary Speer read the report as follows:

Report of the Committee on Criminology

At the two previous annual meetings, the Committee on Criminology presented a complete report on crime in general, with concrete recommendations in regard to the criminals in this state. These recommendations were as follows:

The Committee feels that the medical profession of Delaware should be more interested in the prevention of crime rather than in the treatment. Therefore, it recommends to have a closer co-operation between the public educational system, judicial system, bar association, organized social workers, and the medical profession. To find better methods for rehabilitation of delinquent children. To establish better environment for the vast majority of children who are in unhealthy and inhuman environment. To have adequate forces in organization for prevention of crime, for studying each individual delinquent child.

As to care and treatment of criminals in this State, the Committee finds that in the last few years the state courts have endeavored more and more to give each criminal a fair trial. Many doubtful cases have been referred to the Mental Hygiene Clinic and state psychiatrist, to have complete examination and prolonged observation before presenting the cases. The office of the Attorney General has been very co-operative in this procedure. The Committee hopes that the courts of the state of Delaware will take the same stand as the courts of many states, especially the state of New York. That no case of felony should be tried in the courts unless there is a complete social, psychological and psychiatric report.

The Committee recommends to request the Legislature to appropriate sufficient funds to survey this state in regard to delinquency and present definite plans for the prevention of delinquency.

The Committee recommends to request the Bar Association of Delaware to appoint a committee of three, representing each county of the state, who jointly with the committee from this society will continue the efforts in studying the question of crime.

The above mentioned reports were received and filed by the Society. Nothing has been done towards carrying out any of the recommendations. The Committee felt at the last annual meeting, as well as it feels now, that unless practical use is made of the recommendations made to the Society, it would be far from profitable to spend more time making others. We can only ask you, if you feel that it is feasible, than an effort be made to carry out such recommendations as have already been made.

The section on Forensic Psychiatry and Conduct Disorders of the American Psychiatric Association, of which the chairman of your committee is a member, is endeavoring to have closer co-operation between the members of the Medical Association and the Bar Association, for creating new laws for the prevention of crime.

The Committee is urgently requesting the Society to authorize the President to make use of the recommendations made by this Committee, in the very near future.

Respectfully submitted,

M. A. Tarumianz.

Dr. Bastian: I move the report be accepted.

Dr. MacCollum: I second the motion.

..The motion was put to a vote and was carried...

President McDaniel: Report of the Delegate to the American Medical Association!

Dr. Bird: It just happens that there are two more committees who are to report to the House of Delegates, that are omitted from our program through error. They are the Committee on Tuberculosis and the Committee on Medical Economics.

President McDaniel: Report of the Committee on Tuberculosis!

Report of the Committee on Tuberculosis

Your Committee on Tuberculosis has about the same report to make as last year. At that time we had requested about $500,000 from the Legislature for improvement of the Brandywine Sanitarium and for the carrying on of the work. The Legislature saw fit to appropriate $100,000, on which the Governor did not feel he could sign the bill; consequently there has been very little that has been done. The Committee feels that the same recommendation should be made to the Legislature the coming legislative session, especially since there has been an increase in tuberculosis in Delaware, as there has been in other places.

The Committee has worked in conjunction with the Anti-Tuberculosis Society and the Chamber of Commerce, and they are of the same opinion that this money should again be asked of the Legislature.

The work, as you know, at the Harrington Fair that was conducted by the Anti-Tuberculosis Society in the distribution of literature was very successful this year. There has been other work done about which Dr. Wales will tell you, and we will leave it for his paper tomorrow.

Respectfully submitted,

M. I. Samuel.

President McDaniel: Is there any question anyone would like to ask on this report?

Dr. MacCollum: I would like to make the motion, or have this House of Delegates go on record as approving a greater appropriation to the Tuberculosis Sanitarium and for the treatment and cure of tuberculosis in this state. I would like to see the House of Delegates make that as a recommendation to the Scientific Committee—approving a greater appropriation for the treatment of tuberculosis.

Dr. Bird: I would like to second that motion.

Dr. Bastian: I don't believe that many people in the state of Delaware realize how crowded that institution is, and the great importance and necessity of having more room. At the present time it requires from three to four or five months to get a patient in. They have to wait until somebody dies or leaves the institution.

There has not been enough publicity given to the importance of that institution, for it does a wonderful work, and there are a great many people whose lives could be saved and who could become useful citizens if they could get in there soon enough.

I would like to see our Legislative Committee take a very active part in our next session of the legislature to get a better appropriation for that institution.

President McDaniel: Does anybody else have anything to say on this question?

What is your motion, Dr. MacCollum?

Dr. MacCollum: That this question be referred to the Legislative Committee for action.

Dr. Bastian: I second that motion.

..The motion was put to a vote and was carried...

Dr. Bastian: I move that the report of Dr. Samuel be accepted.

Dr. MacCollum: I second the motion.

..The motion was put to a vote and was carried...

President McDaniel: The report of the Committee on Medical Economics!

Dr. Bird read the report of the Committee on Medical Economics as follows:

Report of the Committee on Medical Economics

The report of the Economics Committee is brief. The collapse of the Delaware relief program in March, 1934, brought to an end the program for pay for medical care for those on the relief rolls. The Committee then pledged the profession to continue this work without pay. Before this, however, the Kent County Society had officially gone on record as favoring no participation in the FERA, but preferred to take care of the indigent and small pay cases according to the old system of giving care without regard to the ability of the patient to pay.

Delaware does not at present have quite the urgent need for reorganizing care for these two groups that some states have. However, we should look to the future and study the possibilities of some of the plans that have been inaugurated elsewhere, notably those of the Alameda County, California, the San Diego County, California, and the Wayne County, Michigan, Societies. From our knowledge of these plans it is possible, we believe, to evolve a plan that will cover the whole state of Delaware, because it is so small. Should we succeed in such an effort, it would go a long way towards warding off the threatened clouds of compulsory health insurance.

Respectfully submitted,

W. Edwin Bird.

Dr. Bird: I might add, Mr. Chairman, that these three county plans have been the most successful yet evolved. Because of that, the Journal of the American Medical Association, which has made note of these plans in previous issues, has bunched them up lately and reported their experiences up-to-date. You will find the Alameda County Plan in the Journal of the A. M. A. of September 29, 1934, page 997; San Diego County Plan, in the issue of September 22, 1934, page 923; and the Wayne County Plan, which is the city of Detroit practically, in the September 8, 1934 issue, page 759. I want you to read them. In other words, in three of the four issues of September they have purposely bunched them up, and you will find this material very informative. Thank you!...

Dr. Bastian: I move that the report be accepted.

Dr. MacCollum: I second the motion.

..The motion was put to a vote and was carried...

President McDaniel: Now we will have the report of the Delegate to the American Medical Association.

Dr. E. L. Stambaugh read the report of Dr. James Beebe as follows:

Report of Delegate to A. M. A.

I respectfully submit the following report on the Cleveland Session of the American Medical Association held June 11th to June 15, 1934.

First I desire to call your attention to the editorial appearing in The Journal and headed "The Cleveland Session," part of which reads as follows:

"One of the greatest medical assemblages ever held in this or any other country was the annual session of the A. M. A. in Cleveland last week. The attendance was the largest ever recorded in a city the size of Cleveland. On only three previous occasions, even in larger cities, has the attendance exceeded that of this gathering. More significant than the attendance, however, were the nature and the spirit of the occasion, the interest shown, and the significance of the actions taken by the House of Delegates.

"Probably the most important of the resolutions adopted by the House of Delegates were those concerning the principles that are to guide the medical profession in its consideration of new forms of medical practice and the one expressing the unanimous belief of the House of Delegates that only the American Medical Association is entitled to voice the opinion of organized medicine on these topics. The House of Delegates also took many other important actions, which will be regularly considered in the Journal."

"The Scientific Exhibit at the Cleveland session was remarkable for its size, its scope, its instructive value and the beauty of presentation."..........

"The technical exhibits brought together the largest number and variety of industrial organizations catering to the medical profession that have participated in such exhibitions."..........

"The physicians of Cleveland and the state of Ohio surpassed themselves in providing suitable entertainment. The golf tournament of the A. M. Golfing Association included 185 players and the annual banquet was a memorable event. The dinners given by Ohio physicians to the officers and to the House of Delegates of the A. M. A. were not only congenial but also convivial. Many leading physicians held open house during the week. The annual reception for the President was held in one of the most delightful of halls and the music and color of the occasion were brilliant.".........

I would suggest that each of you read the editorial as a whole.

I arrived in Cleveland on the morning of the 11th in the midst of a taxi strike and together with as many as could be accommodated, climbed into the one and only taxi at the station. The driver assured us that if the car was wrecked we would be allowed to get out first. It was the practice of the strikers to allow the passengers to get out whole. However, we arrived safely at the hotel and were requested to register promptly as the meeting would be called to order at ten a. m. From this time on, we were in session continuously from ten a. m. to four p. m.

Your delegate had the honor of being appointed on the Credentials Committee. While the duties were light, there were a number of perplexing questions that had to be settled by this Committee.

The proceedings of the House were very ably conducted by the Speaker, Dr. F. C. Warnshuis. The speaker called attention to the fact that "The responsibility for leadership in medicine and our medical relations to the public and to government rests with this House of Delegates." He also stated that he had stressed this at previous sessions and would do so again because of a deeper realization that grave changes in medical practice are being proposed and advanced.

He also called attention to the fact that a delegate's report in a state journal conveyed the impression that "machinery as well greased and the steam roller working." The Speaker desired to correct such a wrong impression. He called attention to the fact that the procedures of the House prescribe that all reports and resolutions shall be referred to proper Reference Committees. These committees shall hold hearings at which any delegate may appear and discuss a report or resolution. The Committees formulate their recommendations, which are presented at a session of the House for adoption. If no discussion is presented when the Committee's report is read, it is assumed that delegates concur in the report. He also called attention to the fact that the sessions of the House of Delegates are open to all fellows and urges them to attend the deliberations.

At this time the names of the members who had died during the past year were read by the secretary, at which time they were officially recorded in the minutes.

Following this, the speaker presented the President, Dr. Dean Lewis of Baltimore, Maryland, whose address is printed in the Journal of June 23rd. I would, however, like to call attention to the following quotations from his address:

"A relatively small percentage of doctors attend medical meetings. In order to keep these doctors abreast of the newer ideas, graduate courses of instruction should be given. I was in Idaho last September and the members of the state medical society requested that some of the scientific assembly be sent to them or that doctors be sent from the central office to instruct them in the latest diagnostic procedures. Such attempts to give courses have been undertaken by a large number of medical societies and I have been particularly impressed by the plan of the Medical Society of the State of Pennsylvania, which has been supported so enthusiastically and successfully by its president, Dr. Guthrie. I believe that in the not too distant future the study of the possibilities of such graduate instruction should be undertaken by a committee of this House, or by the Council on Medical Education and Hospitals, which already has about all the problems that it can successfully handle."......

"The medical profession requires the good will and respect of the people. I know of nothing that makes people more suspicious of those engaged in the practice of medicine than the expert witness. Lay people must think that medicine does not even approach an exact science, when two men of equal distinction in medicine will give diametrically opposite statements to questions that are asked at a trial.

"Members of the bar realize the futility of much expert testimony, and I would like to see the bar association approached by a committee appointed by the House of Delegates to see whether some method of precedure could be devised by which the expert witness could be eliminated. A reference board, appointed by some competent authority or commission, would probably be most satisfactory, for it could examine in camera the testimony and the documents and hand down the decision, thus avoiding the amazement concerning the conflicting statements of equally capable men."

The President's address was immediately followed by the address of the President-elect, Dr. Walter L. Biering of Des Moines, Iowa, from which I would quote the following:

"In all time medical practice has influenced and gone hand in hand with the advancement of medical education. In this changing order you cannot therefore disassociate the one from the other, and with far sighted wisdom you have already instituted through the Council on Medical Education and Hospitals a resurvey of all the medical schools of this county. No doubt this action was determined as the result of careful actuarial and factual studies, which tell but one story—that each year more physicians are being graduated than present society can adequately support.

"The time has arrived when this Association must recognize its duty to the future welfare of American medicine and attack this problem with all the facilities at its command."..........

"Your second great problem is concerned with the changing order of medical practice. Well meaning non-medical advisers have brought to you a variety of artificial remedial plans that are supposed to solve every phase of the problem. We well know that no single "rule of thumb" proposal or method will provide the remedy. The rendering of efficient and complete medical service is still largely governed by the individualistic relation of physician to patient. Furthermore, the practice of medicine is a profession and not a business or a trade."..........

"From all over this broad land the doctor looks to you members of the House of Delegates, in fullest faith and confidence, not to solve the problem all in a day, but in your wisdom and in the spirit of unity and solidarity to point the way for each to follow gladly."

Following this address reports of the various officers, Board of Trustees, and Standing Committees were presented.

I would particularly call attention to the report of the Committee on Legislative Activities, which can also be found in the Journal of the A. M. A. for June 23. It concerns principally the legislation enacted at the last session of Congress in regards to treatment of veterans. This bill, as you may recall, became a law after passing both the House and Senate over the President's veto. The principal change made provided for free care of veterans for non-service disability.

I would, however, call particularly to your attention the following quotation from the report of the Committee on Legislative Activities:

"We are convinced that if the medical men throughout the country would become interested in the candidacy of those who, regardless of party, hold views in harmony with our profession it would not be long until we have in Congress a very positive influence.

"Such influence cannot be created overnight. It can be greatly developed at this season and definitely crystallized in the November election.........if the members of the medical profession will rally to their duty."

A number of resolutions were introduced under new business, which are too numerous to mention in detail.

The Board of Trustees presented the following recommendation, which was referred to the Council on Scientific Assembly:

"On several occasions the Canadian Medical Association has suggested a joint meeting of the American Medical Association and the Canadian Medical Association. This year an invitation was extended to the Association to meet the Canadian Medical Association in Canada—to have its business meeting in the U. S. and the scientific meeting in Canada.

"The Board looks with favor on the holding of a joint scientific meeting of the two organizations and recommends to the House of Delegates an invitation be extended to the Canadian Medical Association to join with the American Medical Association in its scientific program in 1935."

The Reference Committee on Reports of Officers endorsed the President's address regarding special suggestions relative to postgraduate extension work; also relative to the method of procedure regarding expert medical testimony, suggesting that each state medical society establish co-operation with its state bar association in an effort to correct this abuse. The report as a whole was adopted.

The report of the Reference Committee on Legislation and Public Relations touches on Federal Relief Administration, Choice of Physician, Hospitalization, of Veterans, Contract Surgeons of the Spanish-American War, problem of the Housing of the Surgeon General's library. This report was adopted without objection.

The reports of various other reference committees were made but will go into too much detail to present. Those who are interested can get full information from the Journal of June 30th.

Report of the Reference Committee on Reports of Board of Trustees and Secretary: Committee endorses the comments of the Secretary on the value of militant, active county societies in our organization. It should be emphasized that the country society is the backbone of medical organization and medical stability. The Committee expressed also its commendation of the earnest and sincere work of the Secretary; commended the Board of Trustees on the excellent financial report in spite of the present unfavorable economic conditions.

Comment was made on the recent editorial policies of the Journal in that it had deviated somewhat from those of the past in that suggestions presented by the House of Delegates had been followed to an increased extent and that it seemed to the Committee that the high standard of the Journal had in no way suffered as a result of such action. Economic problems of fundamental importance are constantly arising which should be analyzed so that the medical profession might be given at least an abstract of current developments, and the Committee believes that this field merits more attention in the columns of the Journal. Also the Committee called particular attention to the foreign correspondence feature, which is unique, since there is no other medical publication in the world which maintains similar correspondents in all the leading nations of the world.

The Committee endorsed heartily the ever increasing efficiency and importance of the work done by the Council on Pharmacy and Chemistry, as well as that of the chemical laboratory; recommended increased attention to the problems of physical therapy aspiring in the practice of the physician; stated that the far-reaching influence of radio broadcasting on medical subjects on public thought was worthy of continued commendation and support, and that it is a pity that not *all* of the radio activity on matters of public health and of sickness is under the control of the Association. The Committee wished to condemn the increased broadcasting of unestablished remedies directly to the public and urge further activities on the part of the Board of Trustees leading to some type of control over this evil. Attention was also called to the fact that although many of the state associations have developed into strong, active organizations, nevertheless there are some state societies that are comparatively inadequately organized, confirmation of which one reads in the report of the Bureau of Legal Medicine and Legislation of this year that in an increasing number of states the cults have scored heavily during the year 1933. Report of this Committee was adopted in full as read.

Report of the Reference Committee on Hygiene and Public Health, presented a resolution that the House requests that the proper department be instructed to take such measures as may be necessary to restore the confidence in the use of certified raw milk. This resolution was adopted, and full report of same may be found in the June 30th Journal.

A resolution that the specialties of Gastro-enterology and Proctology be added to the list of specialties in medicine and surgery to be recognized for certification by the Council on Medical Education and Hospitals was approved.

The Committee on Sickness Insurance Problems in the U. S. presented the following report:

"Your Committee believes that this statement of the chairman of the Board of Trustees briefly reviewing the history of the action of the House of Delegates during the past eighteen years sufficiently illuminates the sincere and deep concern of the American Medical Association regarding all social programs affecting the delivery of medical service."........

"Your reference committee has reviewed with painstaking interest the report of the procedures of the commission of the Michigan State Medical Society, commends the efforts of the commission to study and digest an important social operation concerned with medical service in England, applauds the sanity of its conclusion and its recorded opposition to the introduction into the United States of any system of health insurance now existing in any country in Europe, because no system conforms at present with all of the policies adopted by the Michigan House of Delegates in July, 1933; namely:

1. Free choice of physician by the insured.
2. Limitation of benefits to those of medical service.
3. The control of medical service benefits by the profession.
4. The exclusion of individuals or organizations that might engage in health insurance for profit.

"Your committee does not recommend any plan, but has abstracted from the pamphlet the following principles and suggests that they be followed by all constituent bodies of the American Medical Association as bases for the conduct of any social experiments that may be contemplated by them:

First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

Third: Patients must have absolute freedom to choose a duly qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

Fourth: The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.

Fifth: All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physicians. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

Sixth: However the cost of medical service may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

Seventh: Medical service must have no connection with any cash benefits.

Eighth: Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

Ninth: Systems for the relief of low income classes should be limited strictly to those below the "comfort level" standard of incomes.

Tenth: There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession."

Reference Committee on Reapportionment of Delegates advised the apportionment of delegates for the next three years be made on the basis of one delegate for each 775 members or fraction thereof, each state medical society irrespective of the number of members to be entitled to at least one delegate. This resolution was made because the apportionment of the past gave an apportionment of 177 delegates, which is two more than that allowed by the By-Laws; namely 175. This new apportionment would give a membership of 172.

Nominees for President-elect were Dr. J. S. McLester, Alabama, and Dr. Hugh S. Cumming, Washington, D. C., after which it was moved and seconded that the nominations be closed. On ballot, the speaker announced that Dr. McLester had received 85, and Dr. Cumming, 71, and declared Dr. McLester elected. Dr. G. C. Reinle, of Oakland, California, was elected Vice-President for the coming year. Dr. Olin West was elected to succeed himself as Secretary for the coming year, and Dr. Herman L. Kretschmer, of Chicago, was elected treasurer.

The Secretary presented the report of the Council on Scientific Assembly recommending the election of Dr. Howard A. Kelly, of Baltimore, to honorary fellowship. At this time he also read a number of names of American Medical missionaries who were approved for associate memberships.

The Speaker announced that the next order of business was the selection of the place of the 1935 annual session and requested the Board of Trustees to present nominations. The Board of Trustees made the statement that but one invitation was received during the allotted time for the presentation of invitations—that of Atlantic City. The Board of Trustees made the investigation and found that Atlantic City would ably take care of this meeting in 1935, and Dr. Walt P. Conway extended the official invitation, after which the Secretary cast the vote of the House of Delegates and the Speaker declared that the House had selected Atlantic City for its 1935 session.

Dr. G. Clifton Moore, Florida, gave notice that Miami, Florida, would extend an invitation to the Association to meet in Miami in 1936.

In connection with the matter of Delegates, your delegate, after interviewing delegates from a number of other state societies, would suggest that in the future this Society appropriate a stated amount, or pay a portion or all of the expenses of their delegate to the convention, as it may see fit, as one of these three methods seems to be the established practice with other Societies.

Respectfully submitted,

James Beebe.

President McDaniel: You have heard the report of Dr. James Beebe. What is your pleasure?

Dr. MacCollum: I move that the report be accepted.

Dr. T. H. Davies: I second the motion.

..The motion was put to a vote and was carried...

President McDaniel: Unfinished Business!

Amendment to the By-Laws

Secretary Speer: Under unfinished business, Mr. President, last year Dr. Davidson, the secretary of the New Castle County Society presented the matter of the older men, which was giving them quite some concern, and over which they had spent considerable thought.

There are a number of men in each one of our component societies who are getting older, and some of them are incapacitated.

In talking over the matter with Dr. Stambaugh, there finally became evolved a proposed new section to Article VII of the By-Laws of the State Medical Society, which pertain to the duties of the newly elected Council. The new amendment proposed is, as follows: "The Council, upon recommendation of the Board of Directors of a component society, shall have power to remit the dues, assessments, and other financial obligations to the Society of any member who, on account of sickness, age, or other legitimate cause, is unable to pay the same. The name of the beneficiary shall be known only to the members of the Council."

It was submitted at last year's meeting, and of course will be voted on at this meeting.

Dr. MacCollum: What section is that?

Secretary Speer: A new Section 7 to Article VII.

Dr. E. R. Mayerberg: I move the adoption of the new section to our By-Laws.

Dr. Bastian: I second the motion.

..The motion was put to a vote and was carried...

President McDaniel: Is there any new business?

Salary of the Editor

Dr. MacCollum: Under new business, Mr. President, it seems to me that the editor The Journal, after having served the Medical Society of Delaware as editor-in-chief for a period of nineteen years, and after having brought The Journal to a business basis, is entitled to some compensation. As you know, for a number of years The Journal was not a paying magazine, but for the last six years, since The Journal is an independent journal published by this Society, it has brought to our Society probably in the neighborhood of $4,500. It seems to me that the editor-in-chief should be compensated somewhat for his services. He has given his time and his work free, gratis, for so many years, in fact up to this time; and it is my opinion that the House of Delegates should go on record as favoring a certain stipulated sum for the editor of The Journal, and I move you that the House of Delegates authorize a yearly salary to be paid to the editor of the Delaware State Medical Journal, the amount to be determined by the Council of the Medical Society of Delaware. I would like to say, though it is not a part of my motion, that I think that amount ought not to be less han $25 for each month.

Dr. Wales: It is with a great deal of pleasure that I second that motion.

DR. E. R. MAYERBERG: I would like to raise the ante. As long as the Council is going to consider it, I would like to raise that ante to $50 instead of $25. It is worth that, and then some.

DR. SAMUEL: I second the amendment.

PRESIDENT MCDANIEL: That would make it $600 a year. Do you want to make it that?

DR. BIRD: This is rather embarrassing to me. It was totally unexpected, but I have been very glad to do my little bit for this Society. However, I do believe a salary should be paid—not because I am the incumbent; I am today, it is true, but the time is going to come when I won't be.

As to the amount, you read the report that some years we made $900 clear, and this last year only $400. If it is your desire to pay the editor a salary, I believe it would be wise to leave the amount open for a conference of the Council. Our By-Laws provide that funds shall be under the general supervision of the Council, so it is my opinion that the best way to arrange this would be to have a conference between the Council and the Publication Committee and let them determine any compensation, and the amount thereof.

PRESIDENT MCDANIEL: Do you want to make it that way?

DR. MACCOLLUM: I am satisfied to accept that.

DR. WALES: I accept the suggestion also.

PRESIDENT MCDANIEL: The motion then is that a salary should be paid to the editor, such salary to be determined by the Council after a conference with the Publication Committee.

..The motion was put to a vote and was carried...

PRESIDENT MCDANIEL: Are there any resolutions?

Resolution on Radio Broadcasts

SECRETARY SPEER: On the resolutions, I have a set of resolutions that are submitted both by the Illinois Medical Society and the American Medical Association in regard to radio broadcasts. If it is the pleasure of the House of Delegates, I will read these and let them take action as they see fit.

Secretary Speer then read the resolution as follows:

Resolution Opposing the Exploitation of Drugs, Remedies, Etc., Over the Radio

WHEREAS, The health of the citizens of the United States constitutes the greatest asset of the nation, and the responsibility of conserving the health of the citizens and restoring them to health in times of illness reposes in the Medical Profession, and,

WHEREAS, This responsibility is very great, as is evidenced by the high educational and professional standards which physicians are required to meet in the various States of the Union before being permitted to diagnose disease and treat the sick, and,

WHEREAS, Satisfactory and safe service of this type can only be rendered after a long and careful study of the causes and symptoms of disease, and that these causes and symptoms can only be determined after an interview with and physical examination of the patient, and,

WHEREAS, No rational or safe treatment can be decided upon and carried out under circumstances other than those above set forth without danger to the life or health of the patient, and,

WHEREAS, For many months past the Radio Broadcasting Companies of the United States have through their various broadcasting stations permitted the exploitation of many drugs, preparations, patent medicines and so-called cures, to the radio audiences of America, and,

WHEREAS, It has been well established that some of the drugs, preparations and patent medicines so exploited are dangerous in the hands of the laymen; others are of doubtful value, and in practically all instances their value for the relief of the symptoms and conditions for which recommended have been overstated and are misleading to the public, and,

WHEREAS, The symptoms and conditions for which these drugs, preparations and patent medicines are recommended may be, and frequently are, indications of serious conditions calling for careful study on the part of a well qualified physician in order that a correct diagnosis may be made, and the proper treatment instituted before the disease reaches an advanced stage, and,

WHEREAS, Radio broadcasting is under the control of the Federal Radio Commission, and the radio is being used to broadcast non-supportable claims and statements regarding a large number of drugs and preparations for the treatment of human ailments:

THEREFORE, BE IT RESOLVED, That the Medical Society of Delaware is opposed to the advertising, recommending or in any way exploiting over the radio any preparations, remedies, medicines or appliances for the treatment of human ailments; and that a copy of these Resolutions be forwarded to the Federal Radio Commission with a request that in the interest of the health of the citizens of the United States they exercise their authority to discontinue such advertising over the radio.

BE IT FURTHER RESOLVED, That physicians use such influence with their patients and with the public as may be necessary to secure their co-operation in sending protests to the Federal Radio Commission and to Broadcasting Stations against misleading and unwarranted medical advertising.

DR. E. R. MAYERBERG: I move the adoption of the resolution.

DR. MACCOLLUM: I second the motion.

..The motion was put to a vote and was carried...

Miscellaneous

PRESIDENT MCDANIEL: Communications!

SECRETARY SPEER: As far as communications go, there are a great number of different communications on varying topics, all of which I tried to answer personally in those cases where they were of little importance or of a routine nature; the others were answered by me after consultation with the Council or with those whom I thought knew something about the subject in question.

A lot of the communications came in in the form of questionnaires. The answers were required in very concise form. All you had to say was yes or no to them, with very little explanation.

There were several communications received from Dr. Woodward, head of the legal department of the A. M. A., with reference to certain bills that were submitted in the Congress. Most of these, however, were with reference to different acts with regard to veterans' bonuses and compensation. I attended to all of those merely by communicating with Senators Townsend and Hastings and Congressman Adams.

There are no other important communications on the table at the present time.

PRESIDENT MCDANIEL: Appropriations!

SECRETARY SPEER: There are none.

PRESIDENT MCDANIEL: Approval of Scientific Program!

DR. BASTIAN: I move we approve the program as it has been presented and have the proceedings printed in THE JOURNAL.

DR. MACCOLLUM: I second the motion.

PRESIDENT MCDANIEL: The motion is that the program as printed be approved. Is that right?

DR. BASTIAN: Yes.

PRESIDENT MCDANIEL: Now the election of a meeting place for next year.

DR. MACCOLLUM: It goes to New Castle County.

DR. BASTIAN: It goes to New Castle County, and

Wilmington seems to be the most central and appropriate place. Therefore, I move we select Wilmington for the next meeting place of this Society, the time to be decided by the President or Council.

Dr. E. R. Mayerberg: It seems to me that Wilmington gets the meeting place every year that New Castle County gets this meeting. For ten years, with the exception of Farnhurst, and Farnhurst is so close to Wilmington that we count Farnhurst as part of Wilmington, that has been the case. I think it would be a good thing, therefore, to hold it elsewhere. When the meetings are away from Wilmington they are pretty well attended, and usually we have more Wilmington men there than when we stay in town. They are too close to their offices when they stay at home. Therefore, I propose the town of Middletown as our next meeting place.

Dr. Samuel: I second Dr. Bastian's motion to hold it in Wilmington.

President McDaniel: We will have to dispose of that motion first, and if it is voted down we can then come to your proposal, Dr. Mayerberg.

It has been regularly moved and seconded that the meeting place for next year be Wilmington. All those in favor of Wilmington, raise your hands. Dr. Mayerberg, there are not many of them left; accordingly next year's meeting place will be in Wilmington.

Now we will have the report of the Nominating Committee.

Report of the Nominating Committee

Dr. T. H. Davies: Mr. President and members of the House of Delegates: we submit the following names for your approval:

First Vice-President: J. B. Waples, Georgetown.

Second Vice-President: C. J. Prickett, Smyrna.

Secretary: W. H. Speer, Wilmington.

Treasurer: A. L. Heck, Wilmington.

There is only one Councilor whose term expires, and we have replaced that name by the name of Dr. Bruce Barnes, of Seaford. That makes the Councilors as follows: Lewis Booker, New Castle; James Martin, Magnolia; Bruce Barnes, Seaford.

Delegate to A. M. A.: C. E. Wagner, Wilmington.

Alternate: Stanley Worden, Dover.

Committee on Scientific Work: W. O. LaMotte, Wilmington; G. V. Wood, Gumboro; C. L. Harmonson, Smyrna.

I will say here that Dr. Wood did not want to go on that Committee but the rest of the Nominating Committee forced him to do so.

Secretary Speer: The By-Laws provide that the Committee on Scientific Work is to be composed of three members, and that the Secretary has to be one.

Dr. MacCollum: We will have to amend that.

Dr. T. H. Davies: We can do that in a moment. With the sanction of the other two members of the Committee, that can be accomplished in a short time. We will retire to do that.

President McDaniel: Go on with the rest of the report, and then you can retire and decide upon that.

Dr. T. H. Davies: It means taking a name off, and the approval of the Committee to do it.

Committee on Public Policy and Legislation: J. B. Niles, Townsend; John H. Mullin, Wilmington; James Beebe, Lewes; William Marshall, Jr., Milford; J. S. McDaniel, Dover.

Secretary Speer: You can only name three on that Committee. The President and Secretary are members according to the By-Laws.

Dr. T. H. Davies: Well, the incoming president is on that.

Dr. MacCollum: You will have to leave that blank.

Dr. T. H. Davies: We knew the Secretary stayed on the next committee:

Committee on Publication: W. E. Bird, Wilmington; M. A. Tarumianz, Farnhurst; W. H. Speer, Wilmington.

Committee on Medical Education: Harold Springer, Wilmington; Joseph S. McDaniel, Dover; William Marshall, Jr., Milford.

Committee on Hospitals: O. V. James, Milford; Roscoe Elliott, Laurel; J. W. Bastian, Wilmington.

Committee on Necrology: Wm. Jones, Laurel; C. C. Deakyne, Smyrna; Joseph P. Wales, Wilmington.

Names to be submitted to the Governor for appointment to State Medical Examining Board: Olin S. Allen, Wilmington; Richard Beebe, Lewes; W. T. Chipman, Harrington; T. H. Davies, Wilmington; G. W. K. Forrest, Wilmington; Dorsey Lewis, Middletown; William Marshall, Jr., Milford; Joseph S. McDaniel, Dover; H. L. Springer, Wilmington.

Dr. MacCollum: I would like to make a statement to the effect that Dr. Davies and Dr. Beebe did not want their names to appear on that list. They objected to it very strenuously, but I more strenuously insisted they go on. It is for that reason their names appear on the list.

Mr. President, shall we retire and finish that report?

President McDaniel: Please do.

...The Nominating Committee retired to consider the changes...

Dr. Heck: The Medical Society of Delaware has a Treasurer's book, which is of very great historical value. This book (indicating) is one hundred twelve years old, and it was used continuously for one hundred ten years. As we now have a new book I think that the old one should be given to some organization for safe keeping. Therefore, I make a motion that the Treasurer's book of the Medical Society of Delaware be given either to the Delaware Academy of Medicine or the Historical Society of Delaware.

I think the delegates should decide which organization should have this book.

Dr. Springer: Mr. President, I would like the privilege of seconding that motion.

President McDaniel: If I may express my personal opinion, I think that a book like this really belongs to the Medical Society of Delaware more than it does to some historical society.

Dr. Heck: I mentioned this matter to several men. There were some who suggested the Delaware Academy of Medicine and others suggested that the Historical Society of Delaware would be the proper custodian. Personally, I think it should go to the Delaware Academy of Medicine.

President McDaniel: Do you incorporate that in your motion? Does your motion read that way?

Dr. Heck: Yes, I so move.

Dr. Springer: I second it.

President McDaniel: It has been regularly moved and seconded that the Treasurer's book be presented to the Delaware Academy of Medicine for safe keeping.

..The motion was put to a vote and was carried...

...The Nominating Committee returned...

Dr. T. H. Davies: We have now changed one name on the Committee on Scientific Work, so it reads as follows: W. O. LaMotte, Wilmington; G. V. Wood, Millsboro; W. H. Speer, Wilmington.

We have substituted Dr. Speer for Dr. C. L. Harmonson on that committee.

On the Committee on Public Policy and Legislation we have added the name of Dr. W. H. Speer, and a place remains blank for the President-elect.

President McDaniel: You have heard the complete report of the Nominating Committee, gentlemen. What is your pleasure?

Dr. Springer: I move that the report of the Nominating Committee be accepted.

Dr. Wales: I second that motion.

..The motion was put to a vote and was carried...

Dr. MacCollum: If there is no further business to come before the House of Delegates, I move we adjourn.

...The motion was seconded and carried, and at ten-fifty-five o'clock, the meeting of the House of Delegates was adjourned.

DELAWARE ACADEMY OF MEDICINE

For the benefit of the surgeons of Wilmington and other physicians who may be interested a purely surgical program for the coming winter and spring has been arranged. These Surgical Conferences will be held the first Friday of the month at the Academy, at 8:45 p. m. The first meeting was held on Friday, November 2, 1934. The complete schedule of lectures is as follows:

November 2, 1934—Technical Procedure in Biliary Surgery, by Dr. George P. Muller, Surgeon to the Lankenau Hospital.

December 7, 1934—Technical Procedure in the Surgery of Cancer of the Colon, by Dr. Damon Pfeiffer, Surgeon to the Lankenau Hospital.

January 4, 1935—Tumors of the Breast, by Dr. Stanley P. Reimann, Pathologist to the Lankenau Hospital and Director of the Lankenau Hospital Research Institute.

February 7, 1935—Pre-and Post-Operative Management of the Handicapped Surgical Patient, by Dr. I. S. Ravdin, Surgeon to the University of Pennsylvania Hospital.

March 7, 1935—Surgical Aspects of the Sympathetic Nervous System, by Dr. J. Parsons Schaeffer, Professor of Anatomy at Jefferson Medical College.

April 4, 1935—Operations on the Stomach, by Dr. W. Wayne Babcock, Professor of Surgery at Temple University.

May 2, 1935—Technical Procedures in Gynecological Surgery, by Dr. Floyd W. Keene, Professor of Gynecology at University of Pennsylvania.

June 7, 1935—Acute Intestinal Obstruction, by Dr. John F. Erdman, New York City, Professor of Surgery at Columbia University Medical School.

There will be no charge. All the lectures will be illustrated.

These meetings are entirely separate from the Pathological Conferences.

The next Pathological Conference will be held, as usual, on the third Friday (December 21st) at 8.45 p. m. The subject will be: Brain Tumors. The pathological aspects will be presented by Dr. Benjamin Robinson, and the radiological aspects by Dr. G. R. Miller, both of Philadelphia. These conferences are highly instructive, and a large and interested audience is always in attendance.

The Library has resumed its evening hours and is now open daily from 10 a. m. to 5 p. m. (Saturday afternoons if requested) and Friday evenings from 7.30 to 10.00. Current journals arrive every day and furnish the latest developments in medicine, surgery, dentistry, and related subjects. Material may be borrowed for home reading. The Library is a pleasant place to spend an hour or so in casual reading, if you are not interested in any special subject.

Dr. Springer Resigns

Due to the press of professional duties, Dr. Harold L. Springer, of Wilmington, has resigned from the State Board of Medical Examiners, of which he has been the secretary since the death of Dr. Henry W. Briggs, seven years ago. Dr. Springer has waged a consistent battle to elevate the standards of medical licensure in this state, and retires from the service with the thanks of the profession. He is succeeded on the Board by Dr. T. H. Davies, of Wilmington.

1935 Scientific Exhibit A. M. A.

Application blanks are now available for space in the Scientific Exhibit at the Atlantic City session of the American Medical Association, June 10-14, 1935. The Committee on Scientific Exhibit requires that all applicants fill out the regular application form and requests that this be done as early as convenient. Applications close February 23, 1935.

Persons desiring application blanks should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn street, Chicago, Illinois.

EDITORIAL

DELAWARE STATE MEDICAL JOURNAL

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Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

It is suggested that wherever possible members of the State Society should patronize our advertisers in preference to others as a matter of fair reciprocity.

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VOL. VI DECEMBER, 1934 No. 12

ANOTHER BIRTHDAY

With the current edition of THE JOURNAL the present editor completes his nineteenth year of service. Many of our older members will recall the first issues, which appeared in 1910, with Dr. Harold L. Springer as editor and Dr. Joseph W. Bastian as business manager. This was a monthly of four to eight pages. In 1914 Dr. Springer was succeeded as editor by the late Dr. Albert Robin, and by this time THE JOURNAL had grown to 16 to 20 pages, but still retained its pamphlet size. In January, 1916, the present editor became the acting editor, assisting Dr. Robin, who wished to be relieved of this task. In April, 1916, Dr. Robin retired from the editorship, and the duty of carrying on Delaware's medical journal fell upon our shoulders, where it has since remained.

Due to the stress of war times THE JOURNAL was published as a quarterly from January, 1918, to December, 1922. Following this, the Delaware journal was combined with the Pennsylvania journal and published again as a monthly under the title of the *Atlantic Medical Journal*, with Dr. Frank C. Hammond, of Philadelphia, as editor and the Delaware scribe as assistant editor. The business details were conducted by our Pennsylvania confreres entirely, Dr. Bastian severing his connection with our journal in December, 1922. The hopes of the two states in merging their journals—that the *Atlantic* might become the organ of several nearby states—did not materialize, and the arrangement was cancelled with the issue of September, 1928, each state having decided to resume publication of its own journal under the original titles.

Thus a new series of the DELAWARE STATE MEDICAL JOURNAL began in January, 1929, with the old Delaware editor back on the job, assisted by Doctors W. O. LaMotte and M. A. Tarumianz, who has also served as business manager. Dr. Tarumianz continues his services as business manager, but in January, 1934, Dr. LaMotte, whose services were ex-officio, was succeeded by Dr. W. H. Speer, the new secretary of the Society.

The new journal conforms in style and format to the other state journals: we are trying to make it compare favorably with them in interest and value. We can succeed in this attempt only if all our members will continue their sympathetic support.

A new medical journal, designed for the laity has appeared, under the title "Health Digest." This newcomer is published in New York City, under the editorship of Dr. J. F. Montague. "It is designed to be a magazine of service rather than profit and carries no advertisements." In this it is almost unique, and one wonders how it can gather sustenance in such times as these. The first copy covers a wide range of topics.

WOMAN'S AUXILIARY: M. S. of D.

The quarterly meeting of the Delaware Auxiliary was held as a luncheon meeting, at Hanna's Tea Room, Wilmington, on December 11th. Due to the absence of the president, Mrs. Joseph S. McDaniel, who is in the South, the vice-president, Mrs. Ira Burns presided. The guest speaker was Mrs. A. D. Ulsoner, of Wilmington, whose subject was the Women's Joint Legislative Committee. Mrs. Robert W. Tomlinson, president of the Woman's Auxiliary of the American Medical Association, extended official greetings. The luncheon was arranged by Mrs. Raymond B. Moore, hospitality chairman, assisted by Mesdames W. W. Lattomus, J. M. Messick and C. L. Munson.

MISCELLANEOUS

Mahlon Locke—Foot Twister Extraordinary

The publicity accorded to Mahlon Locke, Canada's newest contribution to faith healing, has aroused great interest among both the medical profession and the public. The profits to be derived from the sale of shoes to persons suffering with chronic diseases affecting the bones and joints has induced many a department store to add a Locke department to its shoe section. Disciples of the Canadian healer journey about with a motion picture film demonstrating Locke himself in action at the shrine in Ontario. The doctor is shown at work, sitting in a swivel chair while human beings come toward him from eight radiating paths to put their feet trustingly in his lap. Either just before or just after he receives the feet he also receives a dollar bill, which is deposited in his pants pocket. He then bends the foot outward and downward and the patient moves on. Some sort of an associate bends the hands of the patients and there are adjacent quarters in which women assistants wiggle the arms, bend the neck hither and thither and bend the back of the patient over a table. It should be obvious to anyone that Dr. Locke's treatment represents psychologic suggestion reenforced by the laying on of hands; perhaps in a few instances the pulling of an adhesion such as any masseur might attempt. The activities of Dr. Locke are a burlesque on the scientific practice of medicine. His promotion is a violation of every traditional, ethical tenet! There are some who say that even psychologic relief for the chronic arthritic patient is worthwhile, regardless of the means by which it is accomplished. The reaction on the scientific practice of medicine and the chagrin and disappointment of those seriously sick do not permit this laissez faire attitude. Moreover, many a person who might be benefited by scientifically applied physical therapy and by competent orthopedic surgery is spending hard-earned money to make the long trek to Williamsburg in search of a pot of gold which those at the end of the rainbow are quite consistently saving for themselves. (*Jour A. M. A.*, October 13, 1934, p. 1153).

Acceptances Withdrawn

Approval Tomato Juice (M. E. Horton, Inc., Washington, D. C., distributor); California Fruit Growers' Exchange Advertising for Sunkist Oranges, Lemons and Grapefruit (California Fruit Growers' Exchange, Los Angeles, sponsor); Cedar Hill Brand Tomato Juice (Hassendeubel Grocery Company, St. Louis, distributor); Comet Brown Rice, Comet Brown Rice Flakes (Comet Rice Company, New York, manufacturer); Ever Ready Biscuit Flour (Prepared) (F. M. Brown's Sons, Sinking Springs, Pa., manufacturer); Hardy's Twin Loaf Bread (Hardy Baking Company, Flint, Mich., manufacturer); Horlick's Malted Milk Lunch Tablets (Plain and Chocolate Flavored) (Horlick's Malted Milk Corporation, Racine, Wis., manufacturer); Jewel Cocoa, Jewel Extra Fancy Head Blue Rose Rice (Jewel Tea Company, Inc., Barrington, Ill., distributor); Laub's Quality Bread (The Jacob Laub Baking Company, Cleveland, manufacturer); Long Royal Bread, Royal Table Queen Bread (Royal Baking Company, Ogden and Salt Lake City, Utah, manufacturer); Meyer's Corn Syrup with Cane Flavor (Meyers, Walnut Ridge, Ark., distributor); Mity Good Brand Golden Table Syrup (Fox River Grocery Company, Appleton, Wis., distributor); Mother's Jumbo Bread (M. Erickson Bakery Company, Inc., LaCrosse, Wis., manufacturer); Muri Brand Tomato Juice (New England Importation Corporation, Boston, distributor); New State Brand Tomato Juice (The Williamson-Halsell-Frazier Company, Oklahoma City, distributor); N. J. C. Pure Food Brand Juice of Fancy Whole Tomatoes, N. J. C. Pure Food Brand Pancake Syrup, N. J. C. Pure Food Brand Fancy White Syrup (Northern Jobbing Company, Chicago and St. Paul, distributor); Portage Brand Golden Corn Syrup with Cane Flavor, Portage Brand Crystal White Syrup (Portage Wholesale Company, Portage, Wis., distributor); Samos Brand White Crystal Syrup (Samos Wholesale Grocery Company, Cleveland, distributor); Stroehmann's Kew Bee Bread, Stroehmann's Milk Bread (Stroehmann Brothers Company, Harrisburg, Pa., manufacturer); Usemore Brand Golden Syrup, Usemore Brand White Table Syrup (Service Grocer Company, Detroit, distributor); Waldensian Tar Heel Bread (Waldensian Baking Company, Valdese, N. C., manufacturer); Yacht Club Brand Corn Syrup with Cane Flavor (Bemis, Hooper, Hays Company, Oshkosh, Wis., distributor). The sponsors of the listed previously accepted foods are not willing to furnish the Committee with copy of all pieces of new advertising or to inform the Committee of the changes in the composition of the products in accordance with the requirements of its amended Rules and Regulations. Since the sponsors of the listed accepted foods are not willing to comply with this simple requirement to assure that the products and the advertising are being maintained acceptable, acceptance has been withdrawn. (*Jour. A. M. A.*, November 3, 1934, p. 1379).

Use of Dilaudid in Pain of Cancer

C. Malone Stroud, St. Louis (*Journal A. M. A.*, Nov. 10, 1934), found dilaudid to be an efficient analgesic in the control of constant pain. It is more helpful in cancer than any other opiate that he has used. In order to obtain continuous relief of constant pain, the method of administration is important. The doses should be administered with sufficient frequency to permit continuous effect. Although in the type of case that he observed the detection of habituation was difficult, he believes that dilaudid is less habit forming than morphine. There was less deterioration of character and better morole in patients who were treated with dilaudid than in patients treated with other drugs. The untoward side effects were less troublesome than those of other opiates.

BOOK REVIEWS

Minor Surgery in General Practice. By W. Travis Gibb, M. D., Consulting Surgeon, City Hospital, New York. Pp. 429, with 148 illustrations. New York: Paul B. Hoeber, Inc., 1934.

This is the first volume of a new series of "Monographs for the General Practitioner," by the Hoeber Company. It follows the usual outlines of texts dealing with minor surgery, but devotes too much space to procedures that are not minor at all and which require hospital facilities, if the work is to be done with any degree of assurance and safety. The preface states that the text is written for "the general practitioner, especially one living in a sparsely settled district."

The best chapter is the one on fractures; the one on dislocations is too brief and sketchy. While burns are indexed under four headings, the tannic acid treatment is not mentioned till the fourth heading. Epithelioma of the vulva is mentioned briefly, but much too optimistically: in our observation it carries a mortality rate of 90 per cent. On the whole, however, the text is readable and reliable. The illustrations are good and the index ample.

Synopsis of Genitourinary Diseases. By Austin I. Dodson, M. D., Professor of Genitourinary Surgery, Medical College of Virginia. Pp. 275, with 111 illustrations. Cloth. Price, $3.00. St. Louis: C. V. Mosby Company, 1934.

This book admirably answers the purpose for which it was intended; however, there are minor omissions, one being under hematuria, where the condition is frequently observed in aniline dye workers prior to the development of bladder tumors, as first observed and reported in this country by Anderson, of Wilmington. Aniline tumors themselves, however, are mentioned. A synopsis, on the other hand, is never intended to be encyclopedic, and Dodson's little volume epitomizes the really essential. In its class, we recommend it highly.

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